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BULLETIN

II

October, 1954

No. 1



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of the School of Medicine
in cooperation with the Whitehead Society
and the Medical Foundation
of the University of North Carolina

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Contribution Of The Student To Education

By L. G. Welt, M.D.

A meaningful educational experience must be implemented in a system that involves two-way communication. The educator (i.e., the faculty) sends a message which the student receives and interprets. This message may be subjected to a variety of distortions and these may be introduced at several points in the total communication system. A common source of distortion is the incompetence of the sender to utilize the machinery of communication in a proper manner. The dispatcher may have difficulty in formulating the message appropriately. This, in turn, may be related to a lack of data. It may be distorted by difficulties with the characteristics of the transmitting media. Lastly, it may be distorted by one of several factors associated with the receiving instrument: in this instance, the student. The characteristics of the reception must be relayed back to the sender, unless the latter is to continue to transmit in a vacuum and without the benefit of signals that tell him that the message was received clearly or that it was badly distorted; and, if the latter, where the distortion may have been introduced. There are a variety of signals that serve to inform the dispatcher, and among these may be mentioned the degree of your enthusiasm, your habits of thought, your general conduct, and your answers to questions. However, the signals that are best adapted to indicate distortions are *your* questions directed to the faculty. This signal may make it readily apparent that the message was poorly constructed, or perhaps, an improper or inadequate medium was used to send it, or that there was something wrong in the receiving set that interfered with your ability to receive, record and interpret it appropriately. In this very simple fashion the students are able to share part of the responsibility of their education. The communication system is poor, indeed, if

Dr. Welt is a Professor of Medicine in the School of Medicine of the University of North Carolina at Chapel Hill. This article is a portion of the opening convocation address delivered on September 15, 1954 under the auspices of the Whitehead Society. Those desiring a mimeographed copy of the complete text are invited to advise the BULLETIN, Box 31 Chapel Hill, N. C.

messages cannot be received and interpreted properly in a reasonably consistent fashion.

More important, however, is the signal which tells the faculty that the message as sent was received "loud and clear," but that despite this it was incomprehensible. This usually means either that the message was valid but not appropriately interpretable because some part of the receiving set was missing or poorly connected, or that it was substantially invalid despite the excellence of its mechanical transmission and reception. This signal which states that the message was heard "loud and clear" but that it was incomprehensible is usually sent in the form of a critical and searching question by the student. It is then incumbent on the thoughtful teacher to re-evaluate the message in terms of its essential comprehensibility, and, specifically, as this is viewed with reference to the particular nature of the receiving set at the other end of the communication system. He may be able to reconstruct the message so that it is interpretable; he may find that a minor adjustment made in the receiving set—perhaps, by the addition of a single datum—will make the original message interpretable; he may decide after due reflection that it was basically invalid in the first instance.

Each of us who functions as a message sender in our educational system has been working with certain problems in a particular area for some time. It is inevitable that we will collect and retain a number of preconceptions, that we cease to think critically about certain concepts, fail to recognize that new data have invalidated our ideas. You will find that we may provide glib and oversimplified explanations of medical phenomena. In contrast, you students approach these problems with a fresh eagerness and with an unprejudiced orientation; you will not, as yet, have developed emotional attachments to pet concepts. You are not bound by traditional patterns of thought—and, hence, on many occasions, you will find that the explanations that we have considered satisfactory for some years are completely unacceptable. If you challenge our hypotheses with intelligent criticism, we must review and re-evaluate all of the available data. On some occasions this analysis will reinforce our acceptance of the challenged hypothesis, and it may provide insights into a better way to send the message. However, more often than you suspect, the review of all the data may make it quite clear that the concept is, in fact, untenable, and, hence, rightfully uninterpretable by you. Your critical analyses expressed as doubts and questions raise new

problems that must be resolved. In this fashion the faculty benefits in a remarkable manner from the two-way communication system; new questions, or old questions re-stated, become the substrate for a series of investigations which ultimately must increase our insights into basic physiologic mechanisms and the manner in which alterations in these impinge on the total response of the organism which is the expression of a disease.

These insights into the nature of the relationships between student and faculty have other significant implications. Perhaps the most important of all for you to recognize at once is that unlike the multiplication tables in arithmetic, the biologic and medical sciences represent a *process*. There is constant change and growth and our ignorance is abysmal. Hypotheses which were reasonable in the 1930's are unacceptable in whole or in part in the 1950's. This does not mean that those of us who had our introduction to the study of medicine in the 1930's wasted our time in the attempt to understand these earlier hypotheses. To the extent that they presented the best approximate resolution of the scanty data available at that time, they were useful in our thinking about a problem. More important is the fact that they supplied the framework within which new questions were formulated.

If the student is to understand today's concepts, he must expose himself to more than one educational technique. The lecture can be made a useful tool in education when it complements your reading and study. It can serve to present individual points of view and philosophical attitudes. It can be most effective if the lecturer can assume that you have already familiarized yourselves at least with some of the standard literature. He is then in position to aid you in the interpretation and synthesis of what may appear to be irrelevant and conflicting data. In the process of your own reading and study you will prepare the indispensable basis for the reception of the lecture message. Your curiosity should lead you to a literature with which the lecturer can not possibly contend in a brief period. However, if you present him with the opportunity, he may be able, in the same short time, to help you with an interpretation that may clarify several hours of your investment in study. The lecture really only helps you to an extent commensurate with your individual pursuit for information and understanding; and in the absence of this effort on your part, the 'chalk and talk' exercises will make little or no contribution to your education.

The student, if he wishes, can readily participate in the

research that his questions have stimulated. There are many opportunities, and a student will always find a cordial welcome should he express the desire to help in the search for answers to questions. An experience in a research investigation is most gratifying, and is a powerful educational tool. Its values far exceed the merits of the specific data that may be acquired. It provides an opportunity of a more intimate and mutually beneficial relationship between the student and individual members of the faculty. It reinforces the principles of the scientific approach which have general application in all medical activities. It provides insights which help to develop a critical attitude toward the great mass of literature to which we are all constantly exposed. These values are not abridged by the modest proportions of the research, nor should the lack of an immediately practical application serve as a deterrent. Dr. Richard Henry Whitehead, whose name honors your Society, presented his thoughts on these matters in the presidential address before the Philosophical Society of the University of Virginia in 1915. I would like to quote a small portion of his remarks: "We need not worry very much about the immediate 'practical' value of research. If history teaches anything, it is that a given generation is by no means always the best judge of the work done or the facts brought to light during its brief existence. A monk makes certain experiments upon some flowers in the Monastery garden, and his observations attract no attention from his contemporaries; but fifty years afterward these same observations become the basis of one of the most interesting and fruitful of modern hypotheses. Does anybody suppose that Louis Pasteur as he watched the behavior of certain crystals dreamed that he was taking the first step in the creation of a new science which would transform medical thought and practise and bring untold good to mankind? And who fifty years ago could possibly have foreseen that the completion of the Panama Canal would be conditioned upon a knowledge of the natural history of a wretched insect? And so when that eternal question, what's the use, asks itself, as it so often will, we can leave the final answer to those who shall come after us.—The essential thing is that the worker shall be actuated by a strong desire to know the truth, so that the work will be honest, and the workman have joy in his work. If in this spirit a man finds a bit of truth, or approximation to the truth, however modest, his work is good—good for him and good for those submitted to his influence."

Lastly, I would warn you against the philosophy of the 'prac-

tical' in your general medical education. Over-emphasis on "facts" (in quotes) and techniques, and under-emphasis on broad general principles can hardly be honored with the phrase: medical education; and as technical training it will, at best, be reasonably valid only during the few years during which you receive it. It is an anti-intellectual attitude and can hardly serve to foster a spirit of scholarship. The area of medical education which is criticized and interfered with most by those who support this philosophy concerns the basic pre-clinical sciences. Some would say that too much time is spent in these disciplines. It is suggested that the medical student should begin to see and experience contact with patients on the very first day of matriculation.

The fabulous growth in Medicine which is apparent to all of us is directly dependent on the scientific attitudes taught, and the data collected by the methods of the pre-clinical disciplines. More emphasis, not less, must be placed on the study of physiologic, biochemical, pathologic, and psychologic mechanisms. The consideration of disease processes, symptoms, signs, and therapy cannot be properly appreciated without rigorous attention to basic mechanisms and their alterations which are the expression of a clinical disorder. It is in the basic pre-clinical sciences that the scientific methodology and approach can best be inculcated in the new student.

It is suggested, for example, that the importance of the study of acid-base relationships can best be illustrated to the first year student by having him see a patient with diabetic acidosis. Certainly there is something more profound in the study of these matters than such an immediate and narrow application. An understanding of these problems as they may be related to the broad study of physiologic reactions will allow the student to be free to use this information in a variety of circumstances as he ultimately meets them at the bedside. Such a specific orientation and subversion of a major group of physiologic and chemical inter-reactions would appear to be a short-sighted exploitation of a basic science. The study of these mechanisms needs no such puny motivation—they have intrinsic merits and a dignity which demand no further defense.

There are other overtones in the "practical" approach that are disturbing. There is the inherent danger that the student will consider the basic sciences as a hurdle in his path to the bedside, rather than as the very important sub-strata upon which his clinical experience must be imposed if the latter is to have any lasting

significance. Moreover, I would suggest that the opportunity for the student to share in the responsibility of the care of a patient is a privilege that should be earned, rather than an exercise which is thrust upon him prematurely.

Dr. Ed Hedgpeth once told me there were two types of lecture. In one group the lecturer showed lantern slides, and in the other the speaker had a message. I have taken his advice quite seriously and have scrupulously avoided the use of a single chart or graph because I wanted to bring you a message. In summary, these are the thoughts I would leave with you:

1. You are not merely the receptors in an educational process. You must also serve as the senders of signals and messages. Education is, indeed, a two-way system of communication. Listen and read attentively, but do not mistake authority for truth and do not submit to authority in lieu of a more rational explanation of conflicting data.

2. Cultivate the techniques of *learning* as assiduously as you attempt to master "facts." The latter are always in quotes; they have a very temporal quality, and they are important as hypotheses only insofar as they are helpful in understanding today's data, and as they serve as the base of reference to gain more information and better insights. These latter may then destroy the initial hypothesis itself.

3. Accept some of the challenges your questions offer, and seek the opportunity to share in an investigational experience. Although it may increase your investment of time, the rewards make it profitable.

4. Do not consider the pre-clinical sciences as an obstruction in your path to the bedside. These are truly the basic medical sciences, and without a proper understanding of these your appearance at the bedside will be an irrelevant event. The *sine qua non* of the fine physician is a highly developed sense of responsibility. Your first responsibility is to prepare yourself properly for the study and care of the ill.

5. Lastly, consider your faculty as your fellow-students and friends. We expect to help you to learn, and, in turn, you must contribute to *our* education. To the extent that you fail to do this, we will be a poorer faculty, and you will ultimately suffer thereby. Our ability to help you and those that follow is contingent on your contribution as students, and we hope that you will remain students throughout your careers in Medicine.

Reviewing One Thousand Maternal Deaths

By Robert A. Ross, M.D.

A marked reduction in morbidity and mortality is seldom spontaneous and is seldom due to a single factor or circumstance. Such phenomena occur when there is a combination of socio-logically conscious populace, friendly and devout legislators, financial aid, and, if fortunate, improved remedial aids.

Maternal mortality rates in North Carolina have shown a steady decline:

1932-36.....	71.1 per 10,000 live births
1941-45.....	33.0 per 10,000 live births
1949.....	11.8 per 10,000 live births
1951—Figures indicate further decrease in total maternal deaths with relative increase in non-obstetric causes.	

The enactment of the Hill-Burton Bill by Congress was an enabling factor. This is clearly demonstrated by the fact that 60 per cent of the hospitals built with Hill-Burton funds are in rural areas, and North Carolina is the largest rural State in the Union. Another pertinent fact is that these hospitals must provide for both white and nonwhite sick; and this in a state that has the second largest Negro birth rate and the fourth largest Indian population.

In 1945 a statewide "Good Health" program was authorized by the Legislature and supported by the State Medical Society and a large group of interested laymen. At that time the State was forty-fifth in doctor-population ratio, forty-second in hospital bed population percentage, and forty-first in maternal mortality. At present the doctor percentage has increased to thirtieth and the hospitals and health centers have increased 71 and 35 per cent, respectively. All of these new units have accommodations for maternity patients and the maternal mortality position has improved to thirty-fifth in the list of states.

	HOSPITALS & CENTERS	BEDS	BLOOD BANKS
1924	71	2,186	0
1947	115	9,636	9
1952	248	13,700	52

Dr. Ross is Professor of Obstetrics and Gynecology in the School of Medicine of the University of North Carolina at Chapel Hill.

The present Maternal Mortality Committee was established in 1946. It has no legal authority and has no paid "workers." Its duty is to analyze death records, assemble all possible information, and attempt to recommend possible remedial measures. It recognized the valuable contribution such groups had made in reducing maternal mortality in other areas. The criteria it set were more stringent than those in use by the Federal agencies; hence, our figures are higher. It was felt that the greatest good could come from rigid rules. This has penalized the doctors, but has given scrupulous information. Incidentally, the specialists in the centers have been given more minute inspection and more pointed letters than the general physicians working under less favorable circumstances.

Table I. Maternal Mortality in North Carolina, 1946-1950
1,000 Maternal Deaths

Cause	Number	Percentage
Toxemia	264	26.4
Hemorrhage	259	25.9
Embolism	74	7.4
Infection	73	7.3
Cardiac disease	64	6.4
Anesthesia	25	2.5
Other obstetric	103	10.3
Nonobstetric	112	11.2
Insufficient information	26	2.6
	1,000	100.0

A maternal death is defined as any death, regardless of cause, occurring during pregnancy, or within six months after termination of pregnancy. This includes any death due to homicide, suicide, accident, or disease not even remotely connected with pregnancy. All maternal deaths are divided into "obstetric" and "nonobstetric" deaths. A "nonobstetric" death is one in which the major cause of death is in no way related to the pregnancy. A death is considered "obstetric" if the major cause of death falls into any one of the following three general groups:

1. Direct obstetric complications, such as abortion, ectopic pregnancy, etc.;
2. Diseases aggravated by the physiologic changes in the demands of pregnancy;
3. Diseases which lead to obstetric complications or necessitate obstetric intervention.

One of the biologic functions of the married woman is that of reproduction, yet this analysis reveals 844 obstetric deaths; and, associated with this maternal loss is a fetal salvage of only 49 per

cent not including neonatal deaths. Thus the loss is compounded.

Table II. Fetal Salvage, 882 Patients

Cause of Death	Fetal Loss	Fetal Salvage	
		Fetal Salvage	Percentage
Toxemia	122	142	53
Hemorrhage	172	87	33
Embolism	27	47	60
Infection	71	2	3
Cardiac	25	39	61
Anesthesia	10	15	60
Other obstetric causes	50	53	51
TOTAL	477	385	49

The 264 deaths (26.4 per cent) from the toxemias and renal diseases simply confirm what has been written over the the years regarding this miserable preventable complication rampant in this area. Equally significant, the toxemias were thought to be a contributing factor in 93 cases in which the primary cause of death was listed in some other category. The 73 deaths from "puerperal infection" also reflect the influence of poverty, malnutrition, anemia, and the inability of the "medically inarticulate" to avail themselves of even obvious and ready aid. They also point to the increasing abortion rate in the nonwhite.

During the year 1946 through 1950 there were 532,310 live births. The midwife delivered 2.7 per cent of white and 35.9 per cent of nonwhite mothers in North Carolina. Though we know of the large numbers of mothers cared for by these people, there is a certainty that we have not helped them and used them in a thoroughly intelligent manner. They are sensitive. They have unbounded confidence in their own ability and any criticism or suggestion of criticism is likely to lead to sullenness, anonymity, or even chicanery. Our best approach is through the County Health Department.

Table III. Mortality Rates and Place of Delivery in Representative States for 1949

State	Percentage Nonwhite	Total Deliveries	Mortality (per 10,000 live births)	Delivery (percentage) M.D. at		
				Hospital	home	Midwife
North Carolina	32.9	35,555	21.7	35.0	30.0	35.0
Mississippi	56.2	37,318	30.8	17.0	21.0	62.0
District of Columbia	41.3	8,190	8.5	97.0	3.0	0.0
Illinois	10.0	18,917	12.1	78.0	21.0	1.0
Pennsylvania	7.5	16,861	16.0	91.0	9.0	0.0
New York	8.8	26,504	20.8	96.0	3.0	1.0
California	8.3	20,414	13.7	9.0	3.0	1.0

The totals were sufficient to be statistically sound and the division into home, hospital, physician, and midwife deliveries gives interesting and helpful information. In North Carolina dur-

ing the year's study there were 35,555 nonwhite deliveries, only 35 per cent of which were in hospitals and the mortality rate was 21.7 per cent. In a large northern state there were 26,504 such deliveries, 96 per cent of which were in hospitals and the mortality was 20.8 per cent.

The highest maternal mortality is in the highest nonwhite areas. Is this a simple coincidence? Do pellagra and toxemia simply parallel each other? Do the placenta, the pituitary, and the ovary in the female in New England differ from that of the female in Alabama? Temperature, weather, rain fall, humidity, and other regional and seasonal variables have been duly recorded without conclusive evidence. Are vitamins an exogenous hormone? If not, can the bodily economy maintain an adequate hormone level without penalizing the female living on a "Goldberg diet"? We have seen and recorded the paradox of maternal mortality, especially the toxemia deaths, in relation to the economic fluctuations. In the "lean years" when cotton and tobacco are not profitable the rural dwellers and "share croppers" do have a vegetable garden, cow, and chickens. They are on "relief" and are eating more wisely. The death rate is lower. In the "years of plenty" all hours and interest are devoted to the "cash crop." The county store or commissary substitutes for the garden and salt pork ("fat back"), molasses, and corn meal are the stomach-satisfying articles of diet and the energy-producing factors. Rancid fat is not considered a vitamin-negating substance, nor soft sweet carbonated drinks a remarkable substitute for citrus drinks. The triad of "ill housed, ill clothed, and ill fed" is deep in the feeling, and we hope understanding, of the South. They are now becoming increasingly manifest in the metropolitan areas, where citizens of the United States are flocking and a shift in the population trend is evident.

Since the detailed analysis by the Maternal Mortality Committee of the first 1,000 deaths was completed in 1950-51, the committee had an additional 400 charts which have been reviewed but not finally classified. It is gratifying to note an indication that the maternal death-live birth ratio has further decreased and the nonobstetric causes are more evident. We now consider secondary highways, all-weather rural roads, improved farming methods, communications of all sorts of equal importance as Board certification and Federal grants. Most reports agree that once a patient reaches a hospital she will receive good treatment. We have missed the grandparents, but we do have the grandchild.

Delay In Treatment Of Carcinoma Of Cervix

By Charles E. Flowers, Jr., M.D.

Through the eons of time cancer has jealously guarded most of her secrets. We are woefully ignorant of her conception, growth, and fundamental physiology. But as of all things living, cancer does have one weakness. She usually announces her presence by some modification of normal body function. In cancer of the cervix over 80 per cent of patients receive formal notification of the disease in sufficient time to receive adequate curative treatment. These symptoms are intermenstrual bleeding, postcoital bleeding, postmenopausal bleeding, or abnormal vaginal secretions. Yet, unfortunately, patients and physicians often fail to heed these symptoms of cancer. This delay is responsible for the relatively low (31 per cent) five-year survival of patients with cervical cancer.¹

There have been 56 patients with invasive carcinoma of the cervix treated at the North Carolina Memorial Hospital. In 76.8 per cent of these patients there has been either a patient or physician delay in the diagnosis and treatment of the cancer. In 43 per cent of the patients there was at least a three-month delay between the time the patient first noticed a symptom of cancer and the time she sought medical care. In 33.8 per cent of the cases the physician delayed at least one month in establishing the diagnosis of cancer. In 12 per cent of the patients both the physician and the patient were negligent. The average patient delay was 12 months; the average physician delay was 10 months.

Table 1

COMPARISON OF PATIENT AND PHYSICIAN DELAY
IN CANCER OF THE CERVIX IN NORTH CAROLINA WITH OTHER SERIES

Type of Delay	North Carolina 1954	Philadelphia 1948 (2)	New York 1938 (3)	Munich, Germany 1935 (4)
Patient	43	43.7	48.2	21.1
Patient and Physician	12.4	11.8	12.1	30.4
Physician	21.4	15.8	12.8	Not recorded
No Delay	23.2	28.7	26.9	48.5

Dr. Flowers is an Associate Professor of Obstetrics and Gynecology in the School of Medicine at the University of North Carolina at Chapel Hill.

Table I compares these data with other series. It is apparent that patient and physician delay in the treatment of cervical cancer is a universal failing. However, the North Carolina data represent the years 1952-1954; the other series reflect delays in the previous decade.

Table 2

PATIENT AND PHYSICIAN DELAY IN INSTITUTING TREATMENT OF CANCER OF THE CERVIX IN NORTH CAROLINA

Type of Delay	No.	Per Cent	Avg. Age	Colored Per Cent	White Per Cent	Non Private Per Cent	Rural Per Cent	Stage I (Early) Per Cent	Stage II (Intermediate) Per Cent	Stage III & IV (Advanced) Per Cent	Avg. Delay In Months
Patient Delay	24	43	50	60	40	90	60	30	42	28	12
Patient and Physician Delay	7	12.4	40	10	90	90	60	15	70	15	8
Physician Delay	12	21.4	48	70	30	90	60	10	30	60	10
No Delay	13	23.2	44	40	60	60	30	60	30	10	No Delay

Table 2 presents an analysis of the North Carolina Memorial Hospital data. It presents several important facets of the problem in this State:

1. The greatest physician and patient delay occurred in non-private rural patients (rural is defined as any patient having an R.F.D. mailing address).
2. In the 23.2 per cent of patients where there was no delay, either patient or physician, only 30 per cent of the of the patients were rural and 40 per cent were private.
3. In the group of no delay there was the largest number of Stage I carcinoma (five-year survival approximately 60 per cent).¹
4. In the group of physician delay there was the largest number of Stage III and IV carcinoma (five-year survival approximately 15 per cent).¹

Table 3

No. of Cases	PELVIC COMPLAINTS OF PATIENTS HAVING CANCER OF CERVIX*
20	Intermenstrual bleeding.
12	Postcoital bleeding.
9	Postmenopausal bleeding.
7	Bleeding following subtotal hysterectomy.
3	Abnormal vaginal discharge.
2	Intermittent bleeding during pregnancy.

*In some patients there was more than one initial symptom.

Table 4

No. of Cases	INCIDENCE OF PHYSICIAN DELAY
4	In the presence of irregular vaginal bleeding, "shots" were given without pelvic examination or cytology.
2	In the presence of irregular vaginal bleeding, oral medication was given without pelvic examination or cytology.
6	In the presence of bleeding following coitus, there was no pelvic examination or cytology.
2	Irregular bleeding during pregnancy was not investigated.
1	Patient treated for erosion of the cervix by cauterization without cytology.
1	Hysterectomy performed without cytology; invasive cancer found at operation.
1	Abnormal vaginal discharge was not examined and evaluated.
1	Patient advised that postmenopausal bleeding was due to strain or "The Change." No pelvic examination was performed or cytological study made.
1	Patient with known invasive cancer treated by simple hysterectomy without radiation.

Table 3 depicts the pelvic complaint of the 56 patients with invasive cancer of the cervix. Table 4 summarizes the types of physician delay. These patient complaints and incidence of medical errors are legend, yet they continue to be unheeded. At present the elimination of patient and physician delay is probably the most important contribution the American Cancer Society and the medical profession can make.

CONCLUSIONS

From these data one can draw several broad conclusions:

1. The education of the rural population of North Carolina concerning cervical cancer should be intensified.
2. A study should be made of the socio-economic, cultural, and environmental factors which have contributed to this patient delay.
3. A study should be made of the factors which have contributed to physician delay in diagnosis of genital cancer. These include the resistance of patients to pelvic examination, the administration of drugs without physical examinations, the cost of Biopsy and cytological studies, and the paucity of medical facilities in some sections of the state.

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Food Practices Of Obstetrical Patients

By *George Goss Smith, M.P.H., C. Frances MacKinnon, M.S., and Ann Molleson, M.N.S.*

Physicians in North Carolina are becoming increasingly interested in the food habits and customs of people living in their communities. They recognize that the usual food intake may be insufficient to meet nutritional needs. Also consideration of customary patterns of food intake provides a logical basis for planning and implementing dietary improvement or therapeutic modification.

A few objective studies of diets in North Carolina have been reported, but socio-economic stratification provokes caution in citing the food habits of one socio-economic group as representative of another. Dietary inadequacies are more likely to occur among groups with less economic advantage. On the other hand, indigenous food customs may pervade the whole of a society.

A summary has been made of the food practices of obstetrical patients unable to afford the services of a private physician. The women studied came from rural and urban homes primarily in Chatham, Orange, Person, and Lee Counties. If nutritional needs of pregnancy are to be met in this group, the outstanding food practices in need of correction are 1) the relatively low intake of foods that are good sources of protein, and 2) the high intake of inexpensive energy-providing foods.

Protein Sources

A limited but constant source of protein is provided by eggs, universally eaten at breakfast, and dried beans and peas prepared almost daily. Milk intake is low; although it is used in cooking, it is not generally used as a beverage. Lean meat is acceptable, but its purchase is restricted by income. Cheese, liked as a sandwich spread, is rarely used.

Miss Smith is a Research Fellow in Nutrition in the School of Public Health; Miss MacKinnon is Associate Professor of Public Health Nutrition in the School of Public Health; Miss Molleson is Assistant Professor and Nutritionist in the School of Nursing—all at the University of North Carolina in Chapel Hill.

Energy Sources

Biscuits and cornbread are daily fare, although the use of commercial bread is increasing. Desserts other than canned fruit are infrequent. Sweets such as molasses, jam and jelly are favored at meal time. Candy and carbonated beverages are taken between meals. The habitual and generous use of pork fat for seasoning vegetables and for frying purposes assures a high fat intake.

Fruits and Vegetables

Fresh fruits when available are valued as a snack food. Apples, oranges, grapes and bananas are luxury foods purchased for holidays and weekend consumption. Frozen and dried fruits are little used.

Vegetables are limited in variety but those used, such as "greens," cabbage, and sweet potatoes are of high nutritive value.

Meal Pattern

In an article entitled "The Production of Change in a Prenatal Clinic—Some Human Influential Factors," appearing in *Human Organization* (12:21, 1954), Mrs. Nobie W. Jones, of the School of Public Health of the University of North Carolina has described the usual meal pattern of prenatal patients attending an obstetrical clinic and comparable in other ways to the pregnant women considered above. One of the most desirable features noted was the adequate breakfast plan. The frequent use of dried beans and peas and of eggs was in agreement with the information presented—as was the high consumption of carbohydrates (biscuits and cornbread) and of fat (fat back). According to her investigation the usual meal pattern was as follows:

Breakfast: Egg; pork sausage, bacon or fried fat back (salted fat pork); baking powder biscuits made with self-rising flour; coffee.

Noon Meal: Sandwiches of tomato, banana or luncheon meat or soup (canned); coffee, tea or bottle drink. (When the noon meal was not eaten, patients reported they used "snacks" or leftovers from the previous evening meal.)

Evening Meal: Pinto beans, cooked with fat back; vegetables, such as turnip greens; potatoes; baking powder biscuit or cornbread; coffee or tea. (Whenever meat other than fat back was available, it was usually included in the evening meal as was the occasional dessert.)

Sodium Sources

Regulation of the sodium intake has become an important factor in the care of the prenatal patient. Both of the dietary studies cited show the frequent use of baking soda and baking powder breads, and of salted fats. These foods contribute to a high sodium intake.

Improvement of Food Practices Advocated

Suggestions for improving the nutritional value of the food intake were made by the authors of both studies; these suggestions were in agreement:

- 1) To increase the intake of protein: the use of a wider variety of meat is encouraged, e.g. organ meats, low-cost beef. Encourage cheese consumption. Stress the use of milk as a beverage. Dried skim milk offers advantages related to keeping qualities and cost.
- 2) To decrease the intake of (salted) fat: encourage the use of cooking methods in addition to frying, i.e. boiling, broiling, and roasting. Decrease the amount of pork fat used as vegetable seasoning. (Fat back, salt pork, etc. should be considered as a fat, not as a meat.)
- 3) To decrease the intake of carbohydrate: curtail the use of sweet spreads and carbonated beverages. The restriction of the use of biscuit and cornbread may be indicated in some cases.
- 4) To decrease the intake of sodium: curtail the use of salted fats and salted meats (ham, luncheon meat). Substitute light (commercial) bread for baking powder and baking soda breads.
- 5) To increase the vitamin and mineral content of the diet: Encourage the daily use of fruits in season and a wider variety of vegetables. When acceptable to the patient, short-time boiling with a small amount of water is the method of choice for "boiled" vegetables.

Other areas of North Carolina may have dietary problems similar to these described. Differences by geographical location and economic status prevent drawing statewide conclusions from this preliminary information. However, these studies point up some of the dietary problems presented by patients in central North Carolina attending obstetrical clinics.

Seventy-Five Years After The Beginning

By W. Reece Berrybill, M.D.

With the opening of the regular school year in September it seems appropriate to remind alumni, faculty, students and friends that seventy-five years have passed since medical instruction began at the University. During this three quarters of a century there have been many periods in which sailing has not been smooth—to say the least—but always the leadership and devotion of the faculty—Whitehead, Manning, Mangum, MacNider, Bullitt, George and MacPherson—to mention those who built so well from the 1890's to the 1930's, and the loyalty of an increasing number of able alumni have jointly enabled the ship to stay afloat. And now, with the aid of the people of the State, the resources of a now enlarged and expanded State University Medical School are dedicated to help meet the State's health needs. We are embarked upon an exciting venture and have new and broadened horizons.

The school year opened with an enrollment of 241 distributed as follows: 59 seniors, 58 juniors, 58 sophomores and 66 freshmen. The number of freshmen represents a 10% increase over recent classes.

Since June the faculty has been strengthened by the addition of a considerable number of full and part-time staff whose names appear elsewhere in THE BULLETIN. Almost all positions provided for in this year's budget have been filled—the Departments of Pediatrics and Psychiatry in particular have been strengthened. There have been losses in the resignation of Doctors Truscott and Parks in Anatomy, and Dr. Bruce Taylor in Pathology.

Increasingly our faculty are being represented on professional programs throughout the State, the nation, and even abroad. Their contributions to medical journals and the reports of their investigations have been considerable during the past year.

All of the building projects provided by Legislative appropri-

ations have now been completed. The last of these, the Psychiatric Wing, is expected to open for patients before January 1, as a joint teaching, research, and patient service undertaking of the State mental hospitals and the University.

The Gravely Sanatorium for Tuberculosis is operating at almost capacity. The service and teaching functions have been closely and happily integrated with the School of Medicine, and the chest services in Medicine and Surgery under the direction of Doctors Thomas Barnett and Richard Peters are included in the clinical assignments of Assistant Residents and senior medical students.

There are still many problems ahead—of organization, of finances, of administration, and of relationship of the Medical School and Hospital—nevertheless, substantial progress has been made in the past two years.

It should be remembered that too much cannot be done too quickly if accomplishments are to be continuing and permanent. There have been criticisms on this score because of the lack of appreciation of the difficulties involved in beginning a large and complex medical organization and of the framework in which we operate.

We have been the beneficiaries of the understanding and patience of our friends. As we advance in this vast program we have undertaken we will need continuing shares of this cordial relationship with all of our alumni and others around the State who are concerned for its progress.

GRANTS AWARDED

The U. S. Public Health Service has announced the following research grants to personnel of the Medical School of the University of North Carolina for the coming year: (These grants are for a period of one year.)

Dr. Richard M. Peters, Assistant Professor of Surgery, a grant for \$8,000 for further studies of pulmonary blood flow.

Dr. Newton Fischer, Assistant Professor of Surgery, a grant for \$3,999 for studies in the surgical treatment of laryngeal paralysis.

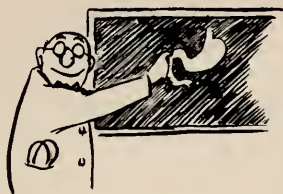
Dr. Kenneth M. Brinkhous, Pro-

fessor of Pathology, a grant of \$15,938 for studies of the anti-hemophilic activity of plasma.

Dr. John H. Ferguson, Professor of Physiology and Dr. Jessica H. Lewis, Research Associate in Physiology, a grant of \$15,228 for studies in blood coagulation and fibrinolytic enzyme system.

Dr. T. Z. Csaky, Assistant Professor of Pharmacology, a grant of \$5,950 for studies of the metabolism and the physiological utilization and actions of methyl ethers of monosaccharides.

A grant of \$1728 was also made for medical students for part-time research fellowships.



WITH THE FACULTY

NEW APPOINTMENTS

The following new appointments have been made to the staff according to an announcement from the office of the Dean of the School of Medicine:

Dr. Nelson K. Ordway, Professor of Pediatrics. Doctor Ordway received his professional education and training at Yale University and the University of Pennsylvania; he comes to Chapel Hill from Louisiana State University where since 1947 he served successively as Assistant and Associate Professor of Pediatrics and from 1952 to August of 1954 as Professor and Chairman of the Department of Pediatrics; before going to New Orleans he was on the staff of the Yale University School of Medicine. Dr. Ordway is particularly interested in heart disease in children.

Dr. Annie V. Scott, Visiting Professor of Pediatrics. A native North Carolinian, Dr. Scott took her medical training at the Woman's Medical College of Pennsylvania. For several years she was on the staff of the Woman's Medical College of North China in Peking; from 1924 to 1951, she was Professor of Pediatrics at the Cheeloo University Medical School in Tsinam, Shantung. More recently she has been on the staff at the Columbia University College of Physicians and Surgeons.

Dr. Thomas E. Curtis, Instructor in Psychiatry. A graduate of Duke University School of Medicine, Dr. Curtis had additional training at St.

Johns Hospital in Tulsa, Oklahoma, the Fairfield State Hospital in Newtown, Connecticut, and the State Hospital in Raleigh.

Dr. Daniel L. Donovan, Instructor in Medicine. A native of Chicago, Dr. Donovan received his M.D. degree from Loyola Medical School; before coming to the University of North Carolina he held teaching positions at the University of Illinois and Duke University.

Dr. John A. Ewing, Instructor in Psychiatry. Dr. Ewing received his professional education and training at the University of Edinburgh and the University of London. He has had appointments in several hospitals in England and in Scotland; since coming to this country he has been a member of the staff at Butner State Hospital.

Dr. John N. Fortin, Instructor in Psychiatry. Dr. Fortin comes to Chapel Hill from Denver, where for the past year he has been an instructor in the University of Colorado School of Medicine; he was chief of male service at the Colorado Psychopathic Hospital, also serving as a part-time psychiatrist for the Student Health Service at the University of Colorado.

Dr. Eugene A. Hargrove, Assistant Professor of Psychiatry. Dr. Hargrove completed his undergraduate medical training at the University of Texas; he had additional training and teaching experience at the University of Pennsylvania and at the University of California.

Dr. James H. Manly, Jr., Instructor in Surgery. A native of Goldsboro, Dr. Manly had his first two years of medicine here, receiving his M.D. degree from the University of Pennsylvania. He had additional training at the University of Virginia Hospital, the U.S. Navy Hospital in Annapolis, the University of Rochester and Strong Memorial Hospital, the U. S. Veterans Hospital in West Roxbury, Massachusetts, and more recently completed his resident training in surgery at the North Carolina Memorial Hospital in Chapel Hill.

Byron A. Schottelius, Instructor in Physiology. Mr. Schottelius received his B.A. and Ph.D. degrees from the State University of Iowa, where for several years he has been a research associate in physiology; prior to that he held a teaching appointment at the State College of Washington.

Dr. George P. Vennart, Instructor of Pathology. Dr. Vennart received his M.D. degree at the University of Rochester School of Medicine. During the past year he has been a resident in the Department of Pathology.

Mr. Albert Linch, Chief Psychiatric Social Worker and Instructor of Psychiatric Social Work. In 1940, Mr. Linch received his B.A. degree from the University of Chicago where he majored in Sociology. His graduate training was obtained at Northwestern and Loyola Universities in 1941-42. He received his M.S. Degree from the University of Wisconsin School of Social Work in 1952. Since May, 1949, Mr. Linch has served as Case Supervisor (Chief Psychiatric Social Worker), with the VA Mental Hygiene Clinic in Wisconsin.

Louis Deno Reed, Instructor, Division of Otolaryngology of the Department of Surgery. Mr. Reed was an undergraduate student at Pennsylvania State and did additional work in Environmental Medicine in the Divi-

sion of Audiology and Speech at Johns Hopkins' School of Hygiene.

Dr. Peter P. Vaughn, Instructor in Anatomy. Dr. Vaughn comes to Chapel Hill from Harvard, where he was a Teaching Fellow. He had his A.B. from Brooklyn College, and his M.A. and Ph.D. from Harvard.

Dr. Josel Szepsenwol, Visiting Professor of Anatomy for fall quarter. Dr. Szepsenwol is a member of the Department of Anatomy, Emory University School of Medicine in Atlanta. He had his M.D. from Geneva University, Switzerland, taught at that institution and later at Buenos Aires University, and has been at Emory since 1946.

Dr. William E. Dossel, Instructor in Anatomy. Dr. Dossel comes to Chapel Hill directly from Johns Hopkins, where he was a graduate student. He received his Ph.D. there. He had his B.A. from Illinois College and his M.S. from Marquette University.

Dr. James Wiley Lynn, M.D., Clinical Instructor in Pediatrics. Dr. Lynn practices in Burlington and is being added to the part-time visiting staff of the School of Medicine and Hospital.

SEVENTY-FIFTH ANNIVERSARY

Dr. W. P. Richardson heads a committee working on plans for the Seventy-fifth Anniversary of the beginning of medical education at Chapel Hill.

Several meetings of the Committee have been held, and the dates of February 10-11, 1955, have been tentatively agreed upon. The program is being designed to include sessions on Thursday evening and on the morning, afternoon, and evening of Friday.

Each of these sessions will be featured by a panel discussion on a timely topic designed to attract not only physicians but all laymen interested in medical progress in North Carolina.

OPENING CONVOCATION

Caution against overemphasis of the so-called "practical" philosophy in general training was sounded by Dr. Louis G. Welt, who delivered the annual fall Whitehead Society Lecture to medical students at the opening convocation Sept. 15.

Dr. Welt, who is associate professor of medicine, UNC Medical School, presented an address on "The Student's Contribution to Education." (See Page 2 this issue.)

The Whitehead Lecture was the final event in a two-day orientation program for the School of Medicine's incoming students. First-year students were welcomed Sept. 14 by Dean W. Reece Berryhill at an assembly.

Students activities planned for the year were outlined by Charles Herring, La Grange, president, Whitehead Medical Society; Robert Savage, Chapel Hill, chairman, Medical School Honor Council; Robert Rimer, Spencer, chairman, intramurals committee; James Fresh, Hickory, representative Alpha Kappa Kappa medical fraternity; and Julian Albergotti, Charlotte, president, Phi Chi medical fraternity.

Faculty speakers were Dr. Hugh Hemmings, interne in pediatrics, who discussed the student American Medical Association; and Dr. Thomas Butler, professor and head of the Department of Pharmacology.

INTEREST IN RELIGION

Evidences of a revival of interest in religion by members of the medical profession were presented in Gerrard Hall in a lecture by Dr. A. C. Howell of the University of North Carolina English Department in May.

Dr. Howell, delivering the third in the annual series of lectures sponsored by the Division of Humanities of the University, spoke on "A Doctor Looks at Religion."

VISITORS TO CAMPUS

The School of Medicine has many distinguished visitors throughout the year. Recently, four of unusual prominence have been guests here.

Dr. Hideo Yagi, Professor of Obstetrics and Gynecology at the University of Okayama, Japan, was here in late September, observing operations of the School and procedures used in training medical students. His stay in Chapel Hill was part of a three-month tour of American medical facilities, made possible by a Rockefeller Foundation exchange fellowship.

Last Spring, just before commencement time, Dr. Raymond Greene, Physician to the Royal Northern Hospital, London, and New England Hospital, London, and President of the Section of Endocrinology, of the Royal Society of Medicine of London, visited the School.

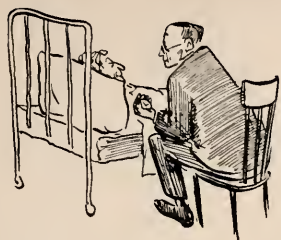
Dr. John Howard Means, the distinguished medical authority of Boston, was Visiting Professor of Medicine for a week around the first of May.

In mid-May, Dr. Franz Ingelfinger, Associate Professor of Medicine of Boston University School of Medicine and a member of Robert Dawson Evans Memorial Hospital staff, visited in the Department of Medicine.

HANDICAPPED CHILDREN

The University of North Carolina was host to the first North Carolina Conference on Handicapped Children here Thursday and Friday, May 27-28.

The state-wide conference was sponsored by the North Carolina State Board of Health and the North Carolina Department of Public Instruction in cooperation with the North Carolina Health Council. Also cooperating and providing financial assistance is the Nemours Foundation of Wilmington, Del.



ALUMNI NOTES

ALUMNI ON STAFF

The following alumni joined the house staff of the North Carolina Memorial Hospital on July 10: Baxter Byerly, '51, in ophthalmology; Joseph L. DeWalt, '54, intern; Hugh C. Hemmings, '54, intern; Tally E. Lassiter, a member of the class of '54 who transferred, intern; Joseph T. Miller, '49, in medicine; Edwin W. Monroe, '49, in medicine; Charles H. Owens, '54, intern; George D. Presley, '54, intern; Joe Robinson, '54, intern; T. Frank Stallings, a member of the class of '54 who transferred, intern; Charles C. Stamey, '51, in pediatrics; Richard I. Walker, a member of the class of '54 who transferred, intern; William H. Weinle, Jr., '54, intern.

Rose Pully, '49, returned to her home town of Kinston during the summer and opened offices at 1009 N. College Street for the general practice of medicine.

John P. Henderson, Jr., '49, was recently appointed by Governor Umstead to the State Board of Health in North Carolina. He served his internship at Watts Hospital in Durham and went into practice in Sneads Ferry in 1952; and has served as a member of the Onslow County Public Health board.

Clifton F. West, Jr., '45, has just completed his military service and is going into the practice of surgery with a group at the Lankenau Hospital in Philadelphia.

CERTIFICATES FOR OLD GRADS

Prior to 1941, students finishing two years of medicine at the University of North Carolina received no tangible evidence of their work here. Since that date, a special Certificate in Medicine has been presented to those students at each commencement period. This was, of course, discontinued when the last two-year class graduated in 1951.

A number of alumni have expressed a desire to have such a certificate, and with the cooperation of the several administrative offices of the University, including the Central Records Office, data on those entitled to receive these certificates have been compiled. Such graduates have been notified by personal letter, and already 268 of them have indicated a desire to receive such a certificate.

Others who are interested should contact Dean Berryhill. Only the actual cost of producing the certificate is being charged to the student, namely \$5.00. Already in production, they should be ready for delivery within a few weeks.

Emily Tufts, '46, recently opened an office at The Harvard Building in Pinehurst, North Carolina, for the practice of pediatrics.

John F. Trotter, '50, has gone into general practice with Dr. H. Homer Allen at 520 Church Street, Decatur, Georgia.

WARREN SPEAKS

The new Health Center at the University of North Carolina, serving as the cornerstone for a coordinated statewide program, faces "a great opportunity to pioneer in the state and nation."

That view was emphasized here June 7 by Dr. Andrew J. Warren, Director, Rockefeller Foundation's Division of Medical and Public Health, who delivered the baccalaureate address at the University's 160th Commencement at twilight exercises in Kenan Stadium.

RALEIGH GRADUATES

Graduates of the "University of North Carolina's Department of Medicine in Raleigh," gathered here for luncheon at the Carolina Inn on Monday, June 7, as part of the activities of Commencement week.

Dr. Robert P. Noble, Raleigh, is president of this special group.

A.G.P. CRUISE

A number of alumni of the School of Medicine, prominent in the N. C. Academy of General Practice, attended the Convention Cruise of that group, which left Morehead City on Saturday, October 16. The party returned on October 22.

The trip included stops at Havanna, Nassau. The S. S. Stockholm was used for the trip.

Frank T. Shafer, '49, has just returned to his home in Salisbury after military service in France; he plans to spend the coming year in general practice in Salisbury.

Charles L. Saunders, '48, has opened his office for the practice of obstetrics and gynecology in Martinsville, Virginia.

WEEKLY NEWS

To those who live and work around the great medical center at Chapel Hill, one of the valuable items is the Weekly News Bulletin, issued from the office of Dean Berryhill. This includes a complete schedule through the week of conferences, clinics, club meetings, reviews, and other events of special interest to medical men. To all of these occasions visiting physicians are welcome.

Anyone desiring a copy of this listing of events should write the office of the Dean.

Charles P. Adams and John L. Waters, both of the class of '50, have gone into practice together in Greenville, North Carolina; their office is located at 109 Pennsylvania Avenue, Greenville.

Thomas S. Long, '38, is now Associate Radiologist at The Baroness Erlanger Hospital, Chattanooga.

John A. Hightower, '45, is practicing internal medicine in Brunswick, Georgia; his address is 502½ G. Street.

Ira Abrahamson, Jr., '46, is now completing a residency in ophthalmology at the Cook County Hospital in Chicago.

Edgar C. Sweeney, class of '47, is practicing pediatrics in Charlotte; his office is located at 1425 Elizabeth Avenue.

Charles Pace, '47, is in practice with his father in Greenville, North Carolina.

J. Vincent Arey, '44, is in the Air Force; his present address is 419 Patrick Street, Mineral Wells, Texas.

J. Hicks Corey, '45, is in the Air Force; his address is 494th USAF Hospital, APO 125, C-o Postmaster, New York City; he expects to be released next June and plans to take additional training at the University of Virginia.



STUDENT ACTIVITIES

NEW MED STUDENTS

Dean W. Reece Berryhill of the Medical School has released the names of the almost 100 per cent Tar Heel group who have completed their orientation and have begun the first of four years' study of medicine.

A New Yorker, Michael P. Cap of Yonkers, is the lone out-of-stater in addition to the group of 65 North Carolinians, who are:

Charlotte: David Carl Biggers, Mason Dillard Field, Jr., Dan Earnhardt Johnson, and John Asbury McGee, Jr.

Chapel Hill: William Robert Beckman, James Edmonds, III, Allen Russell Koenig, Dewey Harris Pate, and Charles Woodrow Phillips.

Fayetteville: Hervy Evans Averette, Jr., and John Sandall Howie.

Greensboro: Vernon Wendell McFalls and John Richard Patterson.

High Point: Richard Lawrence Harris and Charles Walter Stout.

Raleigh: Robert Franklin Hook and Jesse Eugene Lang.

Other North Carolina students include James Thompson Alley, Goldsboro; Clarence A. Bailey, Jr., Selma; Cecil Lee Barrier, Icard; Lewis Ray Beam, Bessemer City; John David Boyett, Albemarle; John Irving Brooks, Jr., Roxboro; Jerry Clifton Brown, Rich Square; William Riley Bullock, Jr., Bethel; Maurice Lewis Canaday, Four Oaks; Harvey Clod-

felter, Jr., Thomasville; Andrew John Courts and Peter D. McMichael, Jr., Reidsville.

Ellis George Aboud and Malcolm Adelphus Cox, Jr., Kinston; Thomas Craven, Huntersville; David Bailey Crosland and Carl Augustus Furr, Jr., Concord; Carolyn Elizabeth Culbreth, Durham; James Ronald Edwards, Relief; William C. Elliott, Lincolnton; George Elliott Ennis, Hickory; Robert Allen Farrell, Troy; Arthur Wynns Gregory and Miles C. Gregory, Halifax; Thomas Matthews Haizlip, Leaksville; George Walters Hamby, Salisbury; Alfred Wilson Hamer, Jr., Morganton; Rebecca Ann Hatcher, Hamlet; James Richard Hughes, Snow Hill; Charles C. Hunter, Jr., Spring Hope; Gene Fonvielle Koonce, Jacksonville; Walter Nathaniel Long, Jr., Belmont; Paul Swicegood McCubbins, Spencer; Charles Thomas Macy, Morehead City.

Addison Goodloe Mangum and Fred Reece Stowe, Gastonia; Nancy Lee Pritchett, Brown Summit; Daniel Wetmore Rader, Burlington; Julian Wood Selig, Jr., Elizabeth City; Thomas Lane Ormand, Monroe; James Jerome Pence, Jr., Wagram; William Robert Story, Wilkesboro; Benjamin E. Thompson, Jr., Rocky Mount; Joe Wayne Thompson, Mooresville; Charles Dixon Wallace, Smithfield; Paul M. Weeks, Clinton; Michael M. White, Lumberton; and John Lindsay Winstead, Jr., Greenville.

SOPHOMORES

Wedding bells rang for nine members of the class during recent weeks. Congratulations are extended to them, as follows:

William O. Jones to Frances J. Dixon, both of Henderson, on September 8;

Robert T. Whitlock of Mount Airy to Joan C. McGee of Milwaukee on June 19; Joseph L. Murad, Wilson, to Judy L. Winstead, Elm City, August 27;

Bennett A. Hayes, Durham, to Mary Evelyn Cross, Suffolk, Virginia, June 19;

Robert S. Cline to Martha Evelyn Yount, both of Hickory, September 5;

John K. Farrington, Thomasville, to Frances Tate of Danville, Virginia, June 6;

Stace Stathocos, Raleigh, to Billie Stavros of Fairfield, Connecticut, on August 22;

E. Lindsay Fearington, Kernersville, to Delores C. Merrill of Southern Pines on June 27;

J. Grayson Hall of Danbury to Julia D. Hunnicutt of Asheville on September 11.

MANNING TRUST

The Isaac H. Manning Trust Fund has been established in the School of Medicine of the University of North Carolina here.

Presented by an anonymous donor, the fund, with an original gift of \$500, will honor the late distinguished professor of physiology and one-time dean of the School. Dr. Manning's service was continuous from 1905 to 1936. The period of his deanship was through 1933.

The fund will provide an annual award to that member of the graduating class deemed by the Dean and the faculty to be especially worthy of honor.

WHITEHEAD SOCIETY

The Whitehead Council for the current session is composed of the following:

President—Charles L. Herring; Vice President—William McLendon; Secretary—William Purcell; Treasurer—Robert Murray; President, Sophomore Class—Benson Wilcox; Whitehead Representative, Sophomore Class—Clint Wilson; President, Junior Class—Robert P. Holmes; Whitehead Representative, Junior Class—Clyde Lloyd; President, Senior Class—James Lamm; Whitehead Representative, Senior Class—John T. Monroe.

ALPHA OMEGA ALPHA

Thirteen charter members of North Carolina's Gamma chapter of Alpha Omega Alpha, national honor medical society, were initiated at a special convocation here Friday night June 4 at the Carolina Inn.

Initiated were five faculty members: Dean W. Reece Berryhill, School of Medicine; Dr. Edward C. Curnen, professor of pediatrics; Dr. John H. Ferguson, professor of physiology; Dr. George C. Ham, professor of psychiatry; and Dr. Ernest H. Wood, professor of radiology.

Graduating seniors initiated were Cornelius T. Partrick, Wilmington; George D. Pressly, Asheville; Joseph L. Dewalt, Dunn; Charles H. Owens, Avondale; and A. Donald Wolff, Bethania.

Third year students initiated were Samuel B. Joyner, Kernersville; John T. Monroe, Jr., Fayetteville, and William L. London, IV, Pittsboro.

Membership is predicated upon scholarship, each student being required to attain an average of 2.2, the standard set, for example, by Phi Beta Kappa and similar scholastic fraternities.

COMMENCEMENT CONVOCATION

The School of Medicine held its first Commencement Convocation Monday, June 7, at 3:30 P.M. in the Hospital Auditorium of the Clinical Building, with Dean Berryhill presiding.

The speakers of the occasion were Dr. Hubert A. Royster, Dean Emeritus and Professor of Surgery Emeritus, who was Dean of the University's "Department of Medicine in Raleigh" from 1901 to 1910; and Dr. E. McG. Hedgpeth, who is University Physician and Clinical Professor of Medicine.

The occasion was designed primarily to honor the forty-eight members of the first four-year graduating class from Chapel Hill.

The auditorium was completely filled for the Convocation, and it is anticipated that this will be a recurring occasion. The Convocation was followed by an informal tea in the Library, attended by the graduates, their families and friends.

BOOK AWARDS

The Mosby Scholarship book awards for 1953-54 went to Harold John Bradley, Greensboro, first-year student; Wade Melbry Brannan, Jr., Dunn, second-year student; Samuel Balfour Joyner, Kernersville, third-year student; and Cornelius Theodore Partrick, Wilmington, and George Pressly, Asheville, both four-year students.

These book scholarships are given annually by the C. V. Mosby Publishing Company of St. Louis, to nominees of the faculty and administration of the School of Medicine, on the basis of general scholastic excellence.

Each scholarship represents a purchase order of books of the winner's own choosing.

SENIORS

Wedding bells figure in Senior Notes. Marriages since late Spring include the following, to whom congratulations are extended:

P. Z. Dunn to Mary Anna Pick; Reginald Tucker to Maude Holmes; Lloyd McCaskill to Nell Procter; Samuel G. Jenkins to Jacqueline Nash; Walt and Ann Peyton; Jim and Eileen Groseclose.

Three additions to Senior families are reported:

Sam and Diane Joyner have a little girl; Smitty and Libba Lineberger have a little boy; and for Bill and Chris Waddell it's a boy.

MacNIDER AWARD

William W. McLendon, Greensboro, second year student in the School of Medicine of the University of North Carolina, was given the William deB. MacNider Award for 1954.

Although the award has no monetary value, it is regarded as the highest recognition conferred upon any student in the School of Medicine in a single year.

The award winner, chosen by secret vote of the members of the current sophomore class, is declared to be the one student who more nearly represents the "various intangible traits of good character" typified by Dr. MacNider. The name of the annual winner is engraved on a memorial plaque.

HONORARY DEGREES

Dr. William Picard Jacocks, '09, retired staff member of the Rockefeller Foundation, and now living in Chapel Hill, was the recipient of the honorary degree of Doctor of Laws at the June commencement of the University of North Carolina.

Dr. A. J. Warren, '12, the commencement speaker, received the same degree on that occasion.

SOPHOMORE ACTIVITIES

During the summer a number of the members of the class had activities related to medicine, among whom were Lindsay Fearrington, a research in the Physiology Department here; Harry Johnson, Jr. served as an externe at Hugh Chatham Memorial Hospital in Elkin.

Robert Whitlock did investigative work in the School of Medicine here; Lois T. Harris worked in the pediatric Laboratory for Dr. Edward Cur-
nen here.

Henry Richie was an operating room technician in Memorial Hospital. Earl Welch was an operating room technician at Baptist Hospital in Winston-Salem.

Jim Fresh did physiological research in cooperation with the Department of Obstetrics and Gynecology, making a comparison of coagulation factors in maternal and new-born blood.

Irl Sell was a research assistant with Dr. James Andrews in the Department of Bio-Chemistry.

Editorial

With the increasing complexity and demand for medical care in the field of Obstetrics and Gynecology, it is essential that physicians who wish to practice in this field be provided with adequate background in general medicine as well.

In order to provide a sound foundation for general practice and OB-GYN, the UNC School of Medicine and the North Carolina Memorial Hospital are initiating a new internship-residency program in 1955. Rather than "rotating" through all services and their sub-specialties, the intern will spend eight months on Medicine and four months on Pediatrics. The second year, or first year of residency, may be limited to the medical and pediatric outpatient clinics and emergency room or may include four months on OB-GYN if this is desired by the man. However, if he follows the recommended plan, he will wait until his third post-graduate year to take further work in OB-GYN, and then, to spend no less than six months on the service.

Thus, it is believed that as long as the major care of patients in this specialty lay within the province of the general practitioner of North Carolina, graduates and post-graduates of this school should be primarily prepared for the sound practice of general medicine and subsequently be given adequate training in Obstetrics and Gynecology.

This issue of the BULLETIN points out some of the problems involved in the practice of Obstetrics and Gynecology as well as some of the work under way at Chapel Hill.

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The BULLETIN

II

December, 1954

No. 2



FRED W. ELLIS, an Associate Professor of Pharmacology in the School of Medicine at Chapel Hill, is here in the process of analyzing a blood sample for alcohol content.

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Certain Aspects Of Alcohol Metabolism

By Fred W. Ellis, M. D.

The general aspects of the physiological disposition of ethyl alcohol by the body are well known. Essentially, alcohol is handled in the following manner: rapid absorption, equal distribution to all body tissues according to their water content, metabolic destruction of most of the consumed alcohol at a rate which varies within rather narrow limits and which seems to be affected relatively little by the concentration of alcohol in the body, and the excretion of a small portion of unchanged alcohol in expired air, urine, sweat and saliva. In regard to the metabolic pattern of alcohol, it is known that the first stage occurs primarily, if not entirely, in the liver and yields the oxidation product acetaldehyde which then, during the second stage of metabolism, becomes rapidly transformed probably to acetic acid. It is thought that the latter product follows the disposal of the general body store of acetate. It is the speed of the first reaction that seems to determine the overall rate of alcohol metabolism.

It would be of considerable interest and importance if the rates of metabolism and/or excretion of alcohol could be altered by therapeutic procedures and during recent decades several attempts have been made to accomplish this purpose. Various approaches to this problem are currently under investigation in this department. This brief summary will include the effects on alcohol metabolism of some of the agents that are at present of clinical interest in the treatment of alcoholism.

Among the carbohydrates, *dextrose* has been found to accelerate the metabolic rate under some circumstances. For example, starvation reduces the rate of oxidation of alcohol and dextrose administration to starved animals and human subjects will restore the rate. The value of dextrose in unstarved states is not as clearly demonstrable although in some instances it has been reported to hasten the disappearance of alcohol from the blood stream. Thus, it would appear that in a normal state of

nutrition, the dextrose effect in accelerating alcohol metabolism is probably variable, whereas in starvation it seems to be of definite benefit. Recent data in the European literature suggest that *fructose* produces a more pronounced effect than dextrose on alcohol metabolism. Confirmation of this claim is being sought in our laboratories.

The wide application of *insulin* in studies relating to carbohydrate metabolism has led to its clinical use in alcoholism. It has been demonstrated in man and experimental animals that insulin in large doses is capable of increasing the rate of metabolism of alcohol by as much as 50%. There are conflicting data, however, supplied by those workers who fail to observe any acceleration of rate. This still controversial situation may be due in part to inadequate dosage of insulin or to the widely varying concentrations of alcohol used in these comparative studies. It is known that pancreatectomized animals have lower than normal rates of alcohol metabolism and insulin restores this deficiency. There are no well controlled data on this rate in human diabetes. The insulin effect, if any, may well be secondary to its influence on carbohydrate metabolism.

Recently the clinical usefulness of *adrenocorticotrophic hormone* (ACTH) and *adrenal cortical extract* in the treatment of both acute and chronic alcoholism has been reported by several workers. In none of these investigations has any attempt been made to study the influence of ACTH or the adrenal steroids on the metabolic pattern of alcohol. Consequently no information is available at the present time on this point. However, a limited amount of work has been done on the effect of alcohol ingestion on adrenal cortical function. It has been pointed out that the clinical picture and certain biochemical findings in alcoholic patients resemble the state of adrenal insufficiency. Furthermore, alcohol has been depicted as a "stressful agent" and its chronic use has been associated with varying stages of hypoadrenocorticism. Experimentally, chronic exposure to alcohol has been reported to cause hypoplasia of the adrenal cortex and adrenalectomized animals have been described as showing "decreased tolerance" to alcohol. The significance of these findings is not clear but they arouse considerable speculation concerning the possible interrelationship between adrenal cortical function and alcoholism. One of the current research projects in this department is concerned with a study of this postulated relationship.

The information available relative to the effects of *vitamins*

on alcohol metabolism is scant indeed. Although both nicotinic acid and riboflavin are constituents of enzymes which are concerned with the metabolism of alcohol, practically no information is available to indicate what capacity, if any, they possess as therapeutic agents to alter the rate of oxidation. Neither has alcohol metabolism in vitamin-deficient states been studied adequately.

Antabuse is a drug which was introduced in 1948 by Danish workers for treatment of chronic alcoholism. When a person takes antabuse alone in proper dosage, very little, if any, undesirable effects are produced in the body, but if such a person also ingests alcohol, a definite response usually occurs which has become known as the "antabuse-alcohol" reaction. This unpleasant experience may be characterized by flushing of the skin, headache, tachycardia, nausea and vomiting, hypotension, and dyspnea. Generally, the severity of the reaction is related to the amount of alcohol consumed. The experience of this reaction and the voluntary ingestion of antabuse are obviously primary requirements for the successful use of this agent in the treatment of alcoholism. Usually in man and in many animals, the presence of antabuse in sufficient concentration in the body will alter the metabolism of ingested or administered alcohol to the extent that acetaldehyde oxidation is markedly slowed down. Since acetaldehyde is normally disposed of rapidly it now accumulates in the body and the blood concentration increases to a significantly higher level than normal. In the usual dosage range antabuse does not significantly change the rate at which alcohol is oxidized to acetaldehyde, hence disappearance of the former from the blood stream will not be retarded. In the overall metabolic pattern of alcohol, the chief effect of antabuse seems to be that of inhibition of certain enzyme activity necessary for the disposal of acetaldehyde. It is generally held, and a great deal of evidence supports the view, that all or a significant portion of the antabuse-alcohol reaction is produced by the increased acetaldehyde concentration. This concept is based on the demonstration of similar responses in man when acetaldehyde itself is administered.

Limited investigations of other substances chemically related to antabuse have been undertaken. It has been observed in this laboratory that certain of these substances are more potent in elevating the blood-acetaldehyde concentration and seem to be less toxic in animals than antabuse but as yet no clinical trials have been conducted with these agents.

Candidiasis Complicating Antibiotic Therapy

By Milton Huppert

Since the advent of antibiotic therapy there have been many reports of complications arising from this type of patient management. Of these complications those caused by microorganisms resistant to chemotherapy are particularly disturbing. These may be of bacterial or fungal nature, and, of the latter group, the yeast-like fungus *Candida albicans* is most frequently encountered. The disease processes caused by this fungus are commonly referred to as Moniliasis, although the more acceptable terminology is Candidiasis.

A legitimate question can be raised as to the pathogenic capabilities of this fungus. *Candida albicans* can be isolated from normal individuals in the absence of any clinical evidence of infection. Most studies of the incidence of this fungus indicate that it can be isolated from the oropharynx or feces in some 20% of any normal population. The range of its occurrence, however, is extremely broad, varying from nil to as high as 90%, and this without any clinical manifestation of an invasive process being involved. On the other hand, however, there can no longer be any question that *C. albicans* is the etiological agent in a variety of pathological conditions varying from a relatively innocuous intertrigo to fatal pulmonary or generalized disease. Fortunately the latter are rare since there is as yet no adequate therapy for this type of infection. Since *C. albicans* is endogenous to the human and since its presence represents a potential—small as it may be—for serious infection, it is necessary for the physician to consider with suspicion any therapeutic measure which may result in an increased population of this fungus in his patient's gastrointestinal tract, and to weigh judiciously the necessity for the therapy against the possibility of active infection by this fungus. This "schizophrenoid" character of *C. albicans*, of being

Mr. Huppert is an Instructor in Bacteriology in the School of Medicine of the University of North Carolina at Chapel Hill. The investigations reported here have been supported by funds from the Office of Naval Research on Grant NONR-855(02).

an apparently harmless saprophyte on one hand while retaining virulent potentialities on the other, raises two questions pertinent for the practicing physician. How often is this complication likely to occur? What can be done to prevent its occurrence or to combat the process once it has begun?

Of the voluminous literature concerned with this problem, a few reports may be cited to indicate the possible incidence. McVay and Sprunt studied a series of cases of infectious disease none of which involved apparent gastrointestinal disturbance. Sixty-six of these patients received only aureomycin. Before antibiotic therapy was instituted *C. albicans* could be isolated from the stool of 12 (18%); during therapy the incidence rose to 47 cases (71%). Of the patients who were originally negative for the fungus, 63% were positive after therapy. Sharp reported on experiences with pneumococcic pneumonia. Of this series 85 were treated with terramycin and the presence of *C. albicans* prior to and during therapy was detected by culturing throat swabs, sputum, and rectal swabs. The incidence of positive isolations rose from 16 to 42% in throat swabs, from 32 to 61% in the sputum, and from nil to 59% in the rectal swabs. Huppert and Cazin investigated the incidence in controlled studies in mice inoculated by the oral route with antibiotics and a suspension of *C. albicans*. In animals receiving only water and the fungus cell suspension, positive recovery of *C. albicans* from stool specimens averaged 6%, while in animals receiving antibiotics and cell suspension positive recoveries were as follows: Aureomycin, 48%; Aureomycin + parabens, 19%; Chloromycetin, 70%; Terramycin, 55%; Dihydrostreptomycin, 68%; Neomycin, 37%; Magnamycin, 48%; Erythromycin, 50%; Penicillin, 32%. It should be pointed out that, in the clinical studies reported above, the occurrence of *C. albicans* in the stool microbial population was not only more frequent but also more abundant in each patient. Of particular importance, however, is the observation that there was no clinical evidence of a disease process due to this fungus, and that the increase represents an infestation rather than an infection. On the other hand there have been reports associating the increase of *C. albicans* in the microbial flora with pathological manifestations which have varied from relatively mild gastrointestinal involvement to severe disseminated and even fatal infections. Woods, Manning, and Patterson have reported on twenty-five cases in which the candida increase was associated with pathological manifestations. Of these, 20 were confined to

the oropharynx, 3 involved the intestinal tract, and 2 were cases of bronchopulmonary candidiasis. One more interesting, but unexplained, point can be illustrated from the series reported by Sharp. Sixty-nine additional patients were treated with sulfadiazine, and in this group there were only insignificant increases in the fungus population during the course of therapy. Some 2 to 4 days after the termination of treatment, however, the proportion of patients positive for *C. albicans* had risen from 30% to 49% in sputum specimens and from 5% to 20% in cultures from rectal swabs. In summary, then, a physician may expect to encounter *C. albicans* in as many as 50% or more of patients on antibiotic therapy, but only a relatively small percentage of these will actually develop clinical disease.

The prevention of this superinfection or its control can be approached in several ways. The mere fact that these complications—of either bacterial or fungal origin—do occur is a potent argument against the indiscriminate use of antibiotics in situations where they are of no practical value. Where antibiotic therapy is warranted, however, the ideal conditions would be to conduct simultaneous bacteriological studies so as to obtain an early warning of dangerous changes in the microbial flora. Since it is not always possible to parallel chemotherapy with laboratory study, other measures must be considered. Most of the reports concerned with this problem have indicated that infestation with candida does not usually reach potentially dangerous levels before the third day of therapy, and that this fungus usually disappears within 24-48 hours following cessation of treatment. One might then feel justified in avoiding the prolonged use of antibiotics whenever the particular case can be managed on a limited schedule of treatment. Where prolonged chemotherapy is necessary, present studies would indicate that it may be possible in the future to use an antifungal agent as an adjunct to the antibiotic. The investigations of McVay and Sprunt and of Huppert and Cazin have indicated that the incorporation of parabens in the antibiotic preparation markedly reduces the frequency of candida superinfection. In addition, reports on the new antifungal antibiotic, Fungicidin, indicate that it may be possible to use this substance in conjunction with antibiotic therapy as a prophylactic against the superimposed infections by fungi. Our own laboratory is also investigating a variety of compounds which may be used for the same purpose.

Studies On Mode Of Formation Of Renal Calculi

By J. C. Andrews, Ph.D.

The mechanism by which renal calculi are formed in some individuals and not in others has been for many years a matter of concern. An interesting feature of this situation is the apparently very irregular geographical distribution of areas in which there occurs a high incidence of such cases, one of which is the central part of North Carolina.

Attempts to account for this curiously irregular distribution have met with little success. Neither has any high degree of success attended the numerous studies which have been made on habitually stone forming individuals to establish some definite biological pattern wherein they differ from normal individuals.

Various suggestions have been made to account for the geographical pattern. Since the great majority of such calculi contain calcium, the hardness of drinking water, as influenced by the geology of the district, has been suggested as a cause. However, while admitting the difficulty of obtaining reliable data in this regard, there appears to the author to be no correlation between incidence of renal stones and the prevailing calcium content of the water of the district. As compared with other areas in the country, central North Carolina is certainly not characterized by particularly hard waters while, on the other hand, some limestone areas, in other states, with extremely hard waters, show no especially high incidence of calculi.

The most common constituents of renal calculi are calcium phosphate and calcium oxalate. While some stones consist of practically pure phosphate, from half to two thirds of those examined in our laboratory contain a considerable proportion of calcium oxalate. This latter constituent, a highly insoluble salt, raises the question as to the source of the oxalate. If the latter is

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solely or largely of dietary origin we may well consider whether the soil conditions of certain areas may possibly be favorable to the production of vegetables with a particularly high content of oxalates or of axalic acid.

Some years ago, aided by generous financial support from Drs. Carrington and Brooks of the Alamance County General Hospital, this department determined the oxalate content of a wide variety of foods. It has long been known that some of the leafy vegetables are high in oxalates. Spinach, the worst offender in this regard, showed in our analyses over 1% oxalic acid when calculated on the basis of the fresh vegetable. While somewhat higher, this value is not out of line with others already recorded in the literature. Certain other foods showed high values. While these values are sufficiently high to justify the avoidance in the diet of some of the worst offenders on the list, they are hardly adequate to account for the efficiency with which some subjects produce renal stones. Moreover, we have made comparisons of the diets of normal subjects with those of habitual stone-formers without being able to use an increased dietary intake as an explanation. In addition, some comparisons of the oxalate content of the same vegetable, grown in this vicinity with that from a distant locality which is not considered to be a stone forming area, have not shown significant differences. It would appear therefore, that, at least as far as concerns the calcium oxalate part of calculi, the explanation for their formation might better be sought in physiological differences between individuals, rather than in differences in dietary oxalate intake.

However, another possible source of oxalates in blood and urine should be considered. A certain amount is present in all samples of both. Most normal adults, on a normal mixed diet, excrete from 20 to 70 mg. of oxalates (expressed as anhydrous oxalic acid) per day. While an increased ingestion of dietary oxalate is reflected in a higher urinary output, a certain proportion of urinary oxalate must have another source. An exaggerated degree of oxalemia and oxaluria has been observed in cases of infants whose diets could not possibly account for their abnormally high output of oxalates. There exists the possibility, therefore, that a contributory factor in production of oxalate calculi may lie in some metabolic route.

One route that has been suggested involves a series of reactions by which pyrimidines, derived from nucleoproteins, may form parabanic acid. This compound may then hydrolyze

to form oxaluric acid and the latter may produce oxalic acid and urea. Thus a direct route may be postulated from ingested nucleoproteins to oxalates. The various steps in this break-down are now in process of investigation in this laboratory. Our results, thus far, indicate that this route by which urinary oxalate may be formed merits closer study than it has yet received. There is also evidence that increased carbohydrate intake may be responsible for increased oxalate production.

A further method of attack on the calculus problem involves physico-chemical considerations of urine from the standpoint of its stability as a solution. To determine whether a given sample of urine is unsaturated, saturated or supersaturated with respect to both calcium phosphate (secondary or tertiary) and calcium oxalate, the following procedure is being employed: In the urine, as passed, there is determined the pH and the content of calcium, magnesium, phosphate, oxalate and urate. Another portion of the same urine is then shaken mechanically with a small added amount of either secondary or tertiary calcium phosphate or calcium oxalate until equilibrium is established (12 to 18 hours). The above analyses are then repeated. In practically all cases where tricalcium phosphate or calcium oxalate is used, a very definite decrease is observed, thus indicating that the urine is to be regarded as an originally supersaturated solution from which deposition of solid calculi in normal subjects is merely delayed. This delay is obviously increased by the presence of urinary colloids. However, other circumstances are concerned here. Recent results in our laboratory have indicated that a given sample of urine, on dilution with even 50% water, behaves the same as if the water had not been added and only the urine were concerned. Such a finding could be taken to indicate that some constituent in the urine is responsible for the equilibrium conditions between solid and liquid and that the addition of water, dissolving as it does only minute amounts of tricalcium phosphate or calcium oxalate, has very little effect. This would, in turn, place the responsibility for calculus formation on a variation in the urinary content of some constituent which reacts with the calcium to form an unionized complex and thus prevents its precipitating as the oxalate or phosphate.

This type of investigation is now being followed in the hope of establishing any possible differences between urines of normal individuals and those from subjects which habitually produce renal calculi.

Anemia: Nature, Detection, Cause, Treatment

By J. G. Palmer, M. D.

One of the more common evidences of disease encountered in modern medical practice is the finding of decreased concentration of hemoglobin in the blood. Procedures for the detection of anemia are the most commonly performed laboratory techniques; antianemic medications are among the most commonly prescribed drugs. It is my purpose to discuss some aspects of the nature of anemia, the methods by which it is detected, the more frequent clinical causes of anemia and the rational means of treating them.

The Nature of Anemia: In normal individuals every cubic millimeter of blood contains four to six million red blood cells. These cells constitute 40 to 50 per cent of the volume of the blood; in the entire body of a normal individual who has a blood volume of five liters, there are approximately 25 trillion red blood cells. It has been determined in several ways that these cells do not live indefinitely, but that each cell remains in the circulation approximately four months. Of the trillions of red cells in the blood at any one time, some are young, others middle-aged, and others are old and will soon be destroyed. The total number remains amazingly constant, however. Therefore the number formed each day, and the number destroyed each day are equal. Furthermore, we can calculate approximately how many are made and destroyed daily. If 25 trillion cells are present, and each cell lives 120 days, then in any day approximately 207 trillion are made and destroyed, or 8.6 billion each hour, or about 30 million during the last 15 seconds you have been reading this sentence. It is obvious that red cells are among the body's most active tissues.

The principal constituents of red cells are water and hemoglobin which together make up 96 per cent of the weight of each cell. Hemoglobin itself accounts for about one-third of the weight of the cells and is the most important compound present. As red cells are formed and destroyed, hemoglobin is also formed

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and destroyed, the iron and protein being reused and the porphyrin portion, which is responsible for the red color of hemoglobin (and of the blood), is excreted; chemical derivatives of it give the yellow color to blood serum and the brown color to the stools.

In such an active and complex system it is not surprising that derangements occasionally occur which result in a decrease in the number of red cells or the amount of hemoglobin in the blood. It is apparent that a reduction in the amount of red cells or hemoglobin in the blood would result if a) something interfered with the rate of formation, the rate of destruction remaining unchanged, or b) if something increased the rate of destruction without an equivalent increase in the rate of production. One or both of these processes occur in all clinical anemias.

Certain substances are required by the body for forming the structural components of red cells; other substances are necessary for the formation of hemoglobin. In pernicious anemia, for example, the principal defect appears to be a lack of substances required for the normal structural development of the cells; therefore a reduction in the number of cells formed occurs; those that are formed contain the normal concentration of hemoglobin. On the other hand in iron deficiency a substance necessary for hemoglobin is lacking, so that the number of cells formed is almost equal to normal, but each cell has less than the normal quantity of hemoglobin. In other anemias both cells and hemoglobin are formed at reduced but parallel rates. A fourth group of anemias results when formation occurs at normal or accelerated rates, but blood destruction is accelerated so that each cell lives less than its normal life span of four months.

The Detection of Anemia: For technical reasons the most commonly used method for detecting anemia is the measurement of the intensity of the color in a sample of blood of known volume. It is then possible to relate the intensity of the color (which for practical purposes is produced entirely by hemoglobin) to the concentration of hemoglobin present. The result is usually converted so as to express the number of grams of hemoglobin in each 100 cc. of blood. Another method of expression is to convert this figure and express it as the per cent of the normal concentration of hemoglobin. It now seems unlikely there is any one normal value any more than there is any one normal value for height or weight of individuals. Therefore it seems preferable

to express it as the number of grams per 100 cc., knowing that normals fall within a range, varying from roughly 11.5 to 17 grams per cent, with most people having 12 to 15 grams per cent.

The accuracy of this method is dependent upon the accuracy of the instrument used to measure the color intensity. A variety of instruments are available, ranging from the Tallqvist with an accuracy no better than plus or minus 30 per cent through the popular Sahli, Haden-Hausser and Dare instruments with accuracies in the range of 8 to 15 per cent to the photoelectric instruments which if properly calibrated can give an accuracy of 2 to 3 per cent.

Other methods used include the actual enumeration of the number of red cells in a given volume of blood, which is least accurate and most time consuming, and the determination of the volume of red cells in a sample of blood using the hematocrit, which is most accurate but requires an adequate centrifuge.

Clinical Causes of Anemia: It is axiomatic that alterations in the rates of production and destruction of red cells must in all cases be due to something, so that anemia is not a disease entity by itself. Therefore, in every instance in which anemia is present, the cause must be known before effective treatment can be instituted.

Of those patients in whom anemia is actually present, the most common circumstance is that in which there is a parallel reduction of both the number of red cells and the concentration of hemoglobin. When this occurs it is usually due to a combination of decreased production rate and increased destruction rate. This situation is found (in order of frequency) in the anemia associated with chronic inflammatory diseases (e.g., rheumatoid arthritis, tuberculosis), chronic renal disease with uremia, malignant diseases, and liver disease. The actual mechanisms by which these disorders produce anemia is not well understood. In such malignant diseases as leukemia the factors producing anemia are undoubtedly different from those acting in chronic infections; the mechanisms in liver disease are certainly different in many respects from those in uremia. In all of these conditions, however, many if not all patients can be shown to have increased rates of cell destruction as well as decreased rates of production. In none of them does the anemia, which must be considered a symptom of the underlying disorder, respond to treatment with hematinics. It is relieved only by relieving the cause.

Next to anemias, secondary to the large variety of conditions mentioned above, the most common type of anemia is that

due to deficiency of iron. In childhood, for special reasons, this is the most common cause of anemia. In spite of the fact that iron is present in the diet in minimum quantities, and iron absorption by the intestine is inefficient, the fact that the body does not excrete a significant amount of iron but continually reutilizes that which is present keeps most of us from becoming deficient in this important element. Deficiency in the supply of iron comes about only when excessive quantities are lost through abnormal hemorrhage, through multiple pregnancies, or when requirements for iron are increased because of growth, which accounts for the frequency of iron deficiency in childhood. Adult males can become deficient only through hemorrhage. When the factors producing iron deficiency are established and, if abnormal, corrected, treatment with oral iron is all that is necessary in most patients. The response will usually be slow but steady; several months may be required before normal hemoglobin levels are established.

Pernicious and related anemias are seen rarely now, although their incidence has probably not decreased. The reason for this is the wide availability of liver, Vitamin B₁₂ and folic acid medication, either alone or in combination with other vitamins. The small oral doses of these substances are often sufficient to correct the anemia, but are unfortunately insufficient for controlling the disabling neurologic features of the disease. Therefore, most patients with pernicious anemia are presenting themselves as neurologic problems. The diagnosis of pernicious anemia cannot be established from the neurologic findings which are similar to those found in other disorders. Therefore it is important to reserve the use of these agents to instances in which they are of specific value. Vitamin B₁₂ is clearly valuable only in the treatment of pernicious anemia; it is important to remember that when treatment of this disease is begun it must be continued for life.

The last group of anemias include those in which the primary defect is excessive rates of cell destruction. Congenital hemolytic jaundice and sickle cell anemia are the most common varieties; they will not be discussed further.

In conclusion two points should be emphasized. First, the presence of anemia is a sign of disease, and makes it imperative that the underlying cause be established and treated. Second, the use of hematinics (liver, iron, Vitamin B₁₂, folic acid) should be reserved for those instances in which the diagnosis has been established and their use is clearly indicated.

Planning Medical Care For The Aged

By Isaac M. Taylor, M. D.

The increasing number of aged people in our population has affected medical practice as it has affected our entire social structure. Physicians have to deal with increasing numbers of old people, and as a result, are increasingly interested in the special problems which medical care of the aged present. The importance of the problem is illustrated by the appearance of professional periodicals and increasing numbers of text books devoted specifically to geriatric medicine. Research into the as yet poorly understood basic aspects of the aging process has also been stimulated. Because of the nature of the aging process, physicians have always devoted a large part of their professional activities to the care of old people and the recent awakening of public interest in the field is welcome because of the promise of better care of the aged through better understanding of their problems.

Although the specific illnesses which afflict old people are largely the same as those of youth, a number of peculiarities in the physiological constitution of the aged alter their reaction pattern to disease and demand the special consideration of the physician. The clinical picture of an acute disease process in an old person may vary markedly from the usual, making diagnosis difficult. In infectious processes, for example, fever may be surprisingly slight. Pain may be unusual in character and location. The atypical picture of abdominal emergencies in the aged is well known to physicians and is representative of the unusual form their illnesses may take. These differences are also probably indicative of deficiencies of the body's defense mechanisms in old age as well as changes in the overt manifestation of disease.

There is in the aged an impairment of what may loosely but perhaps usefully be called reparative capacity which affects markedly the healing processes. The slow repair of fractures is well-known and healing of surgical wounds may be delayed. Most important, the restoration of total body equilibrium which is

Dr. Taylor is an Assistant Professor of Medicine in the School of Medicine of the University of North Carolina at Chapel Hill.

represented by feelings of well-being and strength is likely to require a long time after an acute illness, indicating the poor tolerance of the aged for stressful events.

Perhaps the most important consideration determining the course of an acute illness in an elderly person is the almost universal occurrence of pathological conditions unrelated to the acute episode but complicating its course. Disorders of the vascular system and of the heart, diminution of renal function and decreased pulmonary reserve are common in healthy old people. The body as a whole may have made a good adjustment to these abnormalities and they may indeed be unrecognized until an acute stress places increased demand upon the affected systems. Then the diminished reserve may produce outright failure, and an illness which could be easily controlled in a young person may be fatal in the old because of vascular, cardiac or other complications. In dealing with the elderly ill, the physician must be always alert to the possibility of complicating degenerative disease.

Among the different kinds of illnesses, disorders of the cardiovascular system are numerically the most important causes of death in the aged as in the general population. In this category are included peripheral vascular disease, cerebral vascular disease, and a wide variety of cardiac disorders. These degenerative changes of the vascular system are foremost among the changes which add to the hazard of any illness in old people. It seems unlikely that the toll in death and disability from this class of disorders can be substantially lessened until more is known of their basic pathologic physiology. Malignant disease is next among causes of death. Early diagnosis and treatment of cancer can unquestionably lessen its toll.

A particularly important factor in the general well being of old people as well as their recuperative capacity in the presence of acute illnesses is nutritional status. For a number of reasons, malnutrition is wide spread in old people. Impecunity may dictate the selection of cheaper foods lacking in vitamins and other nutritional essentials. Loneliness and boredom detract from the social pleasures of eating and meals may be irregular or poorly planned. Inadequate dentures play a part. There may be specific deficiencies of digestive function. Nutritional inadequacies are remediable and much can be done to promote the well being of old people if they are corrected. By careful supervision the physicians can do much, but the elimination of many of the causes of malnutrition

will have to await improvement in the general social condition of the aged.

Old people, along with the rest of the population, have benefited from the medical advances of the last fifty years. The control of infectious disease by public health measures and the development of antibiotics is triumphal. Improvement in diagnostic techniques through x-ray and physiological measurements is permitting fuller utilization of our general advances in therapy. Recognition of and increased interest in the special problems of the aged is resulting in better general care. Research into the basic mechanisms of the aging process hold promise for the future.

An outstanding advance of recent years is the improvement in anesthetic, operative, and post-operative techniques which have increased the safety of surgery in the older age groups. Age alone cannot be considered a contra-indication to a needed surgical procedure. Particularly in the field of cancer are these advancements important for they make it possible for even the very old safely to undergo the major surgical procedures often necessary.

An important pitfall to be avoided by the physicians and families of old people is the tendency to attribute complaints and changes in well being simply to "old age." In all cases the doctor must do his best to make specific diagnoses of these complaints. Because of the lack of functional reserve in the elderly, apparently minor illnesses can produce the derangements which may be fatal and prompt diagnosis and treatment are therefore essential. A prompt and thorough investigation of all the patient's complaints must be made so that treatment can be begun at the earliest possible moment.

For these same reasons, periodic health examinations are more important in the aged than in any other group. A thorough health survey with complete history and physical examination and with appropriate laboratory and x-ray studies as determined by the examining physician should be obtained once yearly at least. This will keep the doctor abreast of changes in the patient's system, permitting remedial measures where needed and furnishing a base-line of comparison in episodes of acute illness.

Good medical care of the aged, then, employs the same general principles as good medical care of any age group, but because of the delicate balance by which health is maintained in old people, the skill of the doctor is required to be at a maximum in dealing with them.

Books In Wide Variety Of Subjects

By Myrl Ebert

This year has been very much like other years in at least one respect. The usual volume of books was published in the usual wide variety of subjects. A number show merit and deserve special mention. For example:

Bromberg's *Man above humanity* (Lippincott) is an authoritative, fascinating story of man's attempt to help his disturbed brother. This is not "just another history of psychiatry." Rather, it depicts the evolution of psychotherapy from medicine man to present day orthodox treatment, with considerable attention given to early religious cults, faith-healing, quacks and bumbleres who shared in the development of understanding of the human mind.

Pursuing a similar humanitarian line, Podolsky's *Music therapy* (Philosophical Library) presents a collection of chapter-articles by various authors on the practical application of music in the alleviation of mental and physical distress.

Despite the frequency with which new editions and titles of works in pathology appear, attention should be given to Dublin's *Fundamentals of neuropathology* (Thomas), which is basically a general pathology text with emphasis on diseases "having nervous system manifestations." Coverage is thorough and the clear and comparatively simple technical methods are particularly useful in the general pathology laboratory. It is especially well illustrated, too.

Physiology and biochemistry of the skin (Chicago) by Rothman and his associates offers for the first time those specific aspects, indicated by the title, from the dermatologic point of view. The physiological properties and functions and biochemical processes of the skin are discussed at length with special chapters on cutaneous circulation, pathophysiology of blister formation,

Miss Ebert is the librarian of the Division of Health Affairs Library, University of North Carolina at Chapel Hill. Miss Ebert invites inquiries and correspondence from readers of *The BULLETIN* to whom the library might be of service.

superkeratinization as a general reaction to injury, and other new theories. It is recommended as stimulating reading as well as a reference work.

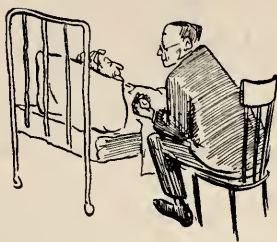
The general practitioner, cardiologist, and specialist in public health and preventive medicine might take serious note of Gertler's *Coronary heart disease in young adults* (Commonwealth). Here a multidisciplinary investigation at the Massachusetts General Hospital of 100 patients under 40 years of age provides a mass of information important to all in the medical and health fields. It is suggested that such techniques described in this study may enable doctors to single out "candidates" for coronary heart disease.

Another hospital study of equal importance but differing in problem is Wright's *Improvement of patient care* (Putnam). Seeking to expand service but still limited in facilities Harper Hospital in Detroit undertook an analysis of organization, services, and personnel based on the view that every member of the staff contributed to the care of the patient. The findings of this expertly conducted study seemed so valuable that the American Hospital Association sponsored the publication. This is probably the first study of a hospital which introduces principles of industrial engineering.

In *Lectures on the thyroid* (Harvard) Dr. J. H. Means surveys present day knowledge of the thyroid and its functions. Special information resulting from the Thyroid Clinic's study of goiter endemic along the eastern slopes of the Andes and recent data of the relationship between the pituitary and thyroid glands are fully discussed.

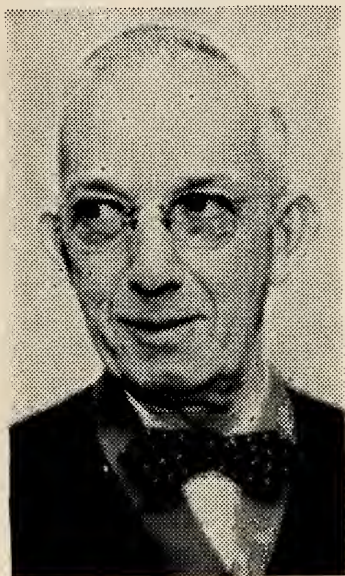
Physicians, parents and teachers will profit from Shirley's *The Child, his parents and the physician* (Thomas) which provides a guide to the emotional and behavior problems of childhood. Frederic Wertham, with his alarming, detailed report of the demoralizing effect of comic books upon youth today, *Seduction of the innocent* (Rinehart), offers urgent information for all concerned with the mental health of children.

Therapeutic abortion (Julian Press) edited by Harold Rosen, is a comprehensive presentation by twenty internationally eminent authorities on the psychiatric, medical, legal, religious, and socio-economic aspects of interrupted pregnancy. Unique in scope and depth of material, it is an excellent source and reference book.



ALUMNI NOTES

KARL PACE HONORED



Dr. Karl B. Pace, of the class of 1912, long-time practicing physician in Greenville, N. C., has been named Family Doctor of the Year for 1954 by the American Medical Association.

This distinction came at the recent meeting in Miami, and honored one whose fellow citizens have described as "one of the golden assets of his community." He has been a physician for 38 years, and all of that time an increasingly useful citizen in so many ways. Few good things in Greenville through these years have been launched and promoted without his active support.

SIMMONS EULOGIZED

The Harvard Public Health Alumni Bulletin, dated November, 1954, devoted 12 pages to a photographic story of the life of Brigadier General James Stevens Simmons, USA (Ret.) who was Dean of that school from July 1, 1946 to the date of his death on July 31, 1954.

Dr. Simmons finished his two years of medicine at Chapel Hill in 1913, and went on to a distinguished career capped by his Harvard tenure. He died in Hartford on his way back to Harvard after a vacation trip to Chapel Hill. His colleagues praised his great work at Harvard, and this pictorial story is a rare tribute to a rare genius who served nobly and honorably in his chosen profession.

William H. Meroney, '43, is with the Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington.

His loyalty to the University of North Carolina and especially its School of Medicine, to the State Medical Society, and other medical groups, and his service on the State Board of Medical Examiners for six years all total in his fruitful life. He was a prime mover in the vast health expansion program that has come into being at Chapel Hill, and from its beginning five years ago has been a director of the Medical Foundation.

GIFTS TO LIBRARY

Miss Myrl Ebert, Director of the Division of Health Affairs Library, reports that many very fine gifts have been presented during the past year.

Among these are current subscriptions to medical, dental, and pharmaceutical periodicals, maintained solely by gifts from faculty and staff subscribers.

In addition, Miss Ebert reports the following outstanding gifts during the year:

Dr. Leon J. Taubenhaus of Shallotte—180 periodicals and books;

Dr. James B. Bullitt—1 double peg-board displayer. (Valued at \$70.00);

Dr. Nathan A. Womack—Fontana edition of Vesalius' *De Humani Corporis Fabrica. Epitome*—1642. Bell—*A System of surgery*—1804;

Many volumes of books written and edited or contributed to by faculty and illustrious alumni have been donated to this Library, i.e. Dr. Nathan Womack, Dr. Malcolm D. Kemp and Dr. James Howard Means (not alumnus, but friend) and others;

Dr. Robert A. Ross—a framed picture showing Anatomical Theater at the University of Bologna;

Henry Schuman—number of historical pamphlets; translation—facsimile of the earliest printed book on wine by Villanova (published by him, too);

Miscellaneous gift collections of old and historically important medical texts and periodicals by Dr. Bullitt;

Antique clock for Library reading room from C. Sylvester Green;

Oil portrait of the late Charles Edmund Kistler presented by his daughter, Mrs. Mary K. Craven. Also frequent contributions, \$1,000 at a time, for special book purchase fund.

Dr. Paul L. Bunce, a book by Zuccheta, *Prima Parte Della Arim-*

FOR STATE'S DOCTORS

Dr. W. P. Richardson, Assistant Dean for Continuation Education, has announced the following postgraduate medical courses for 1955.

He added that certificates of attendance will be given, and all courses provide credit toward fulfillment of the American Academy of General Practice's requirements.

Goldsboro Postgraduate Course in Medicine—January 11, 18, 25, February 1, 8, 15.

Ahoskie-Edenton-Elizabeth City Postgraduate Course in Medicine—January 12, 19, 26, February 2, 9, 16.

Statesville Postgraduate Course in Medicine—March 1, 15, 22, 29, April 5, 12.

Albemarle Postgraduate Course in Medicine February 28, March 14, 21, 28, April 4, 11.

Shelby Postgraduate Course in Medicine—April 12, 19, 26, May 11, 18, 25.

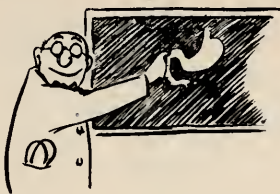
John K. Pearson, '51, is in the Air Force, stationed at the 3585th USAF Hospital in San Marcos, Texas; his address is 105 Belvin Street, San Marcos. He expects to finish his military service in June 1955.

metica—1600. (One of the earliest arithmetic texts published.);

Through the efforts of Dr. Warner Wells, the Library received 3 cartons of early surgical instruments of great historical interest, from Armed Forces Institute of Pathology;

A gift of \$30 from Mrs. Carolyn S. Carlson to set up a new book purchase fund in honor of her father, the late Judge Edwin Earle Rives.

The complete medical library of the late Dr. N. Thomas Ennett, Beaufort, presented by Mrs. Ennett, through the Medical Foundation.



WITH THE FACULTY

FACULTY PROMOTIONS

The following members of the faculty of the School of Medicine have received promotions in rank, as follows, it was announced recently by Chancellor R. B. House and Dr. W. R. Berryhill, Dean of the School of Medicine:

Dr. Louis G. Welt promoted from Associate Professor to Professor of Medicine.

Dr. Thomas B. Barnett from Instructor to Assistant Professor of Medicine and in charge of teaching at Gravelly Sanatorium

Dr. Harry R. Brashear, Jr., from Instructor to Assistant Professor of Surgery in Orthopedics

Dr. David P. Jones from Instructor to Assistant Professor of Medicine in Neurology

Dr. Robert G. Murray from Instructor to Assistant Professor of Surgery in Ophthalmology.

NEUROLOGY SEMINAR

A Seminar on Neurology was held November 16, 17, and 18, at the School of Medicine under the auspices of the Office of Continuation Education and the Neurological Section of the Department of Medicine.

Dr. Thomas W. Farmer, Professor of Neurological Medicine, was director of the Seminar, and Dr. Houston Merritt, Professor of Neurology, Columbia University School of Medicine, New York, and Director of the New York Neurological Institute, was guest lec-

INDUSTRIAL HEALTH

A regional Seminar on Industrial Health co-sponsored by the Occupational Health Committee of the State Medical Society, The Liberty Mutual Insurance Company and the University of North Carolina School of Medicine, has been announced for January 13 and 14.

Physicians and industrialists have been invited to attend the Thursday afternoon sessions which are designed to be of interest both to industrialists and physicians, while Friday's sessions are on topics primarily of concern to physicians.

The Seminar has been planned to meet a two-fold objective: first, to give an interpretation of industrial health, the need for it, what an adequate program consists of and the contribution it makes to industrial efficiency; and second, to provide assistance and guidance for industrial physicians, particularly those general physicians employed by industry on a part-time basis, with respect to some of the common problems with which they are faced.

turer.

Some 25 physicians from over the State attended this 3-day course designed as an intensive review of neurological problems encountered in general practice. This was the first intensive postgraduate course on a single specific topic. Others will be planned for the future.

BIOCHEMISTRY AND NUTRITION

Dr. John Eric Wilson was a research participant in the Biology Division on the Oak Ridge National Laboratories at Oak Ridge, Tennessee during the summer. He was engaged in research on intermediary metabolism and presented a seminar on "Some Aspects of Amino Acid Metabolism."

Dr. Jean Rotherham, who received the Ph.D. degree in Biochemistry at the University of North Carolina in August, 1954, has been awarded a postdoctorate fellowship from the U.S. Public Health Service for the year extending from October 1, 1954. Dr. Rotherham will be engaged in research here on "The Nucleoprotein Composition of Certain Normal Tissues and Tumors During Various States of Cellular Activity."

Dr. Carl E. Anderson is continuing the study of phospholipid metabolism in vascular disease started in the early part of the summer by a grant from the Medical Alumni Fund of the Medical Foundation. Mr. Claude Alton Barnhill, third year medical student from Stokes, is assisting in a phase of this work as a Lederle Medical Student Research Fellow.

Dr. Claude Lee Yarbrow, who won the Coker Award for the best scientific thesis for the degree of Ph.D. last year, is continuing here his study of the metabolism of acetal phosphatides.

PREVENTIVE MEDICINE

Dr. William P. Richardson delivered the graduation address for the School of Nursing of the Gaston Memorial Hospital in Gastonia on August 27.

Dr. Richardson is serving as overall chairman of the area of Extension Services of the University in preparation for the State of the University Conference to be held in March.

BACTERIOLOGY

Dr. W. R. Straughn, Jr. is President of the Society of North Carolina Bacteriologists. The group held its Spring meeting at Chapel Hill.

Dr. William J. Cromartie spoke before the Laboratory Section of the North Carolina Public Health Association in Raleigh on September 24. His topic was "The Effect of Antibiotic Therapy on Medical Bacteriology and Serology."

Under a grant from the Council on Pharmacy and Chemistry of the American Medical Association, Milton Huppert is working on a project for the purpose of purchasing and synthesizing compounds of potential use as prophylactics for the prevention of *Candida albicans* infections occurring as a complication of antibiotic therapy. Mr. Huppert has also received an extension of his contract with the Office of Naval Research for his "Studies of Yeast Infections Following Antibiotic Therapy."

PHYSIOLOGY

Dr. E. P. Hiatt attended the meeting of the Basic Science Section of the American Heart Association, held in conjunction with the International Congress of Cardiology, in Washington, D. C., September 14-16.

Dr. B. A. Schottelius presented a paper, entitled "Functional damage and tension development in experimentally shortened muscle," at the meeting of the American Physiological Society in Madison, Wisconsin, September 8-12.

During the summer, four medical students (Jack P. McDaniel, Bob Holmes, James W. Fresh, and Lindsay Fearington), three graduate students (Margaret Conrad, Donald Olewine, and Barbara Thomas), and one dental student (Ruth Paulson) served as research assistants in the department.

MEDICINE

Dr. John T. Sessions, Jr. spoke before the Richmond County Medical Society at Rockingham on April 27 on the topic, "The Selection and Use of Anti-cholinergic Drugs in Gastro-intestinal Disease." On July 14 he presented the same paper to the Nash-Edgewood County Medical Society in Rocky Mount.

Dr. Thomas W. Farmer attended the April meeting of The American Academy of Neurology in Washington, D. C., and spoke on the topic, "Post - Partum Pituitary Insufficiency."

"The Treatment of Congestive Heart Failure," was the topic of an address by Dr. J. M. Sorrow for the Eastern N. C. Medical, Dental and Pharmaceutical Society in Washington, North Carolina, on April 22.

Dr. H. C. Burnett attended the meeting of the Sub-Committee on Shock, of the National Research Council in Washington last May. He also attended the Sub-Committee of Biology and Medicine meeting of the Atomic Energy Commission in Washington in late June, and went back to Washington in mid-September for a meeting of the Advisory Committee of the same group.

Dr. J. G. Palmer presented a paper entitled "Agranulocytosis" at the State Medical Meeting in Pinehurst last May.

Dr. D. P. Jones spoke at the same meeting on the topic, "Cervical Cord Syndrome," and in June attended a meeting of the American Neurological Association in Atlantic City, where he presented a paper entitled "Subacute Cortical Degeneration."

Dr. L. G. Welt attended the American Medical Association in San Francisco in June and presented a paper to the Section on Experimental Medicine and Therapeutics entitled "Renal

Factors in Regulation of Electrolytes and Water." On September 13 Dr. Welt spoke before the Cleveland County Medical Society on "Management of Dehydration."

Dr. Robert M. Winborne has been awarded a traineeship from the National Institute of Arthritis and Metabolic Diseases of the National Institutes of Health for a period of one year beginning July, 1954. He will work with Dr. Sessions in Gastroenterology.

Dr. Kerr L. White went to Toronto for the Fifth International Congress on Mental Health in August. There he participated in the Technical Section Study Group on Biological Adaptation and Psychosomatic Medicine. In September Dr. White was a speaker at Morganton U.N.C. Postgraduate Course, presenting papers on "Emotional Concomitants of Organic Disease" and "The Psychosomatic Concept of Certain Organic Diseases."

Dr. T. Franklin Willaims attended the International Instrument Congress sponsored by the Instrument Society of America in Philadelphia in mid-September.

Drs. Ernest Craige and Carl W. Gottschalk have been granted an additional sum of money from the North Carolina Heart Association to continue their studies on "Physiology of Renal Tubules." Dr. Craige is also continuing his research in cardiology under a grant from the Wilkes County Heart Association.

Members of the Department of Medicine and House Staff attending the meetings of the American Society of Clinical Investigation in Atlantic City last May included Drs. T. P. Barnett, Burnett, Craige, Sessions, Palmer, Welt, I. M. Taylor, J. W. Woods, George Clifford, Daniel Young, Dewey Dorsett, Christopher Fordham, and Farmer.

OBSTETRICS AND GYNECOLOGY

Dr. Robert A. Ross addressed the Arkansas State Medical Society's 78th Annual Session last April on "Indications for Pelvic Surgery" and "Intra-epithelial Carcinoma of the Cervix." In May he went to Chicago to attend a meeting of the Board of Examiners for the American Board of Obstetrics and Gynecology, and in August attended the N. C. State Maternal Mortality Committee meeting at Wrightsville Beach. On September 15 Dr. Ross gave a paper on "Hemorrhage and Bleeding Tendencies Associated with Pregnancy" at the Tri-State Obstetric-Pediatric Seminar at Daytona Beach, Florida.

On October 12, 1954, Dr. Charles E. Flowers, Jr. addressed the Cumberland County Medical Society in Fayetteville, North Carolina.

Dr. Flowers addressed the County Medical Society in Greenville, South Carolina, on September 7 on the topic, "Medical Complications of Obstetrics"; and the Lee County Medical Society in Sanford on September 14 on "Diabetes and Obstetrical Hemorrhage."

Dr. Deborah C. Leary was one of the speakers at the Spring meeting of the North Carolina Dietetic Association here on May 7. A few days before, she had spoken at the North Carolina State Medical Society meeting on "The Place of Podalic Version and Extraction in Obstetrics Today." In June Dr. Leary was on the program of the American Association for the Study of Sterility meeting in San Francisco.

Dr. Leonard Palumbo, Jr. addressed the Randolph County Medical Society in Asheboro in June on "Diabetes in Pregnancy." In September he served as chairman of the arrangements committee of the organizational meeting of the Southeastern Obstetrical and

SURGERY

Members of the Department of Surgery have attended numerous professional meetings during recent months.

Dr. R. Beverly Raney went to Breton Woods, New Hampshire, in June for the American Orthopaedic Association.

Dr. A. P. Heusner attended the Harvey Cushing Society meeting in Santa Fe, New Mexico.

In September, Dr. R. G. Murray went to Montreal for the International Congress of Ophthalmology.

Dr. Frank C. Winter and Dr. Newton D. Fischer attended the American Academy of Ophthalmology and Otolaryngology in New York, and Dr. Fischer also went to Baltimore for a Seminar on Nasal Surgery.

Dr. Warner Lee Wells presented a paper for the North Carolina Surgical Association at Roaring Gap in September.

Drs. Peters, Thomas and Thomas, attended the American College of Surgeons Congress in Atlantic City, November 15-19. Papers were presented by Drs. Peters and Thomas.

Dr. David A. Davis, and Drs. Grosskreutz went to Cincinnati in October for the meeting of the American Society of Anesthesiologists, and each presented a paper there.

Gynecological Society held in Chapel Hill.

October 17-20, 1954, in New York, Dr. Leonard Palumbo participated in a symposium sponsored by the American Cancer Society on "Malignancy in the Female Genital Tract."

October 30, 1954—Dr. Robert A. Ross and Dr. Charles E. Flowers, Jr. attended meeting of the North Carolina Division of the American Cancer Society. Dr. Ross is on the Board and Dr. Flowers spoke on "Delay in Diagnosing Cervical Malignancy."

PATHOLOGY

Dr. Kenneth M. Brinkhous spent eight weeks in Europe this summer participating in two important international medical conferences. He appeared first at Basle, Switzerland, on July 20, at the International Conference on Thrombosis and Embolism. There he read a paper on "Experiments on the Nature of Cold Injury."

This is a report on a research project conducted jointly with Dr. George Penick, a Markle scholar in the medical sciences, and assistant professor of pathology.

On September 6 Dr. Brinkhous spoke at the Sorbonne in Paris on "Advances in Hemophilia," an area in which he has done extensive research and lecturing.

Dr. J. B. Graham returned on July 1 from Ann Arbor, where he studied human genetics at the University of Michigan for three months.

Dr. G. D. Penick attended the Seventh Annual Meeting of the American Association of Blood Banks held in Washington, D. C. There on September 13, he presented a paper, "Antihemophilic Activity of Stored Blood and Plasma."

Dr. Mitiyuki Shimizu of Tokyo, Japan, a Fulbright scholar is with the Department of Pathology for one year. He will devote most of his time to research on problems of blood coagulation.

Dr. Robert Wagner attended a conference on plasma proteins held by the Protein Foundation in Cambridge, Massachusetts, on November 15 and 16.

Dr. Brinkhous has been appointed chairman of the Panel on Blood Coagulation, National Research Council, and a member of the Subcommittee on Blood and Related Problems. He attended the fall meeting held in Washington November 18-20.

PEDIATRICS

Dr. George K. Summer has been awarded a Research Trainee Fellowship from the National Institute of Arthritis and Metabolic Diseases for the period of one year.

Dr. Edward C. Curnen, Dr. Nelson K. Ordway, and Dr. Sidney S. Chipman attended the meeting of the American Academy of Pediatrics at Chicago on October 4th through 7th. Dr. Curnen also attended a meeting of the Academy's Committee on Control of Infectious Diseases of which he is a member. Dr. Ordway showed an exhibit on Parenteral Fluid Therapy of Children at the Academy meeting.

Dr. Ordway attended an International Pediatric Conference on Electrolytes at Zurich, Switzerland on October 11th through 16th. He was selected by the American Academy of Pediatrics as their representative to this meeting which was organized by Professor G. Fanconi. Dr. Ordway attended the Annual Conference of the National Association for Retarded Children at Boston on October 21st through 23rd.

Dr. William H. Davis, Jr. presented a paper on Anemias of Prematurity to the Roberson County Medical Society at Lumberton on November 1.

Dr. Curnen presented a paper on Rheumatic Fever to the staff of the U. S. Army Hospital at Fort Bragg on October 19th. He presented papers on Rheumatic Fever and Rheumatic Heart Disease at the Post-Graduate Course at Morganton, N. C. on October 27th.

Dr. Ruth C. Harris of the Babies Hospital at New York was a visitor to the School of Medicine on September 24. Dr. Harris, who is Instructor in Pediatrics at Columbia College for Physicians and Surgeons, gave a presentation to the students and staff on Liver Function in Infants and Children.

PSYCHIATRY

Dr. George C. Ham, Professor and Chairman of the Department of Psychiatry of the School of Medicine, attended the meetings of the Group for the Advancement of Psychiatry on November 11-14, 1954 in Asbury Park, N. J. Dr. Ham is a member of that organization's committee on medical education.

On November 15, Dr. Ham addressed the Fifty-Ninth Annual Meeting of the Seaboard Medical Association in Wilson, North Carolina on "The Concept of the Psycho-Somatic Process". He also participated in panel discussions on "Management of Hypertension" and "The Management of Peptic Ulcer".

On November 20, Dr. Ham participated in a panel on "Problems in Establishing a Psychodynamic Explanation" during the Regional Research Conference of the American Psychiatric Association which was held at Duke University.

Dr. D. Wilfred Abse, attended a meeting of the American Association of Professors of Psychiatry at Cleveland, Ohio, June 25-27. The meeting was concerned with the teaching of psychiatry in the modern medical school curriculum.

Acting as temporary chairman of the North Carolina Committee on the Project for Research and Training in Mental Health, Dr. Ham reported the findings of this committee to the Governor's Health Council at a meeting on May 23, in Raleigh.

Dr. Ham was appointed to the Executive Council of the American Psychosomatic Society during the Society's annual meeting which was held recently in St. Louis.

On May 19th, Dr. Bever attended the Workshop on Christian Marriage, held at the Chapel of the Cross in Chapel Hill, and sponsored by the

PHARMACOLOGY

An article by Dr. Thomas C. Butler: "Phenobarbital: Studies of Elimination, Accumulation, Tolerance and Dosage Schedules," appeared in *The Journal of Pharmacology and Experimental Therapeutics*, 111, 425 (Aug.) 1954.

Dr. Butler presented a paper: "Metabolic Conversion of Phenobarbital to the p-Hydroxy Derivative," at the Fall meeting of the American Society for Pharmacology and Experimental Therapeutics in Charlottesville, Virginia, September 8, 1954.

Dr. Fred Ellis was a visiting Associate Professor of Pharmacology, University of Tennessee School of Medicine, Memphis during the last summer quarter.

RADIOLOGY

Dr. Ernest H. Wood and Dr. William H. Sprunt, III, attended sessions of the American Roentgen Ray Society in Washington, D. C., in September. Dr. Wood gave two instructional courses during the week: 1) Cerebral Angiography, 2) Cerebral Pneumography.

Dr. Sprunt attended a conference in Pediatric Radiology at Children's Medical Center in Boston in early October.

On October 6, Dr. Wood participated in a meeting of the Seventh District Medical Society in Shelby, and spoke on "Special Radiologic Procedures."

At a recent meeting of the Neurosurgical Society of America at Mackinac Island, Michigan, Dr. Wood presented a paper entitled "Value of Radiation Therapy in Management of Glioma of the Optic Nerves and Chiasm."

Family Life Council of the North Carolina Council of Churches. The

ANNIVERSARY IN APRIL

April 12-13, 1955 have been set as the dates for the observance of the Seventy-fifth Anniversary of the beginning of medical education at Chapel Hill.

Dean W. Reece Berryhill announced that the celebration was moved to this date (from the originally planned February 10-11, 1955) to accommo-

date several of the principal speakers and to avoid conflict with other functions of approximate dates.

The present plan calls for panel discussions on pertinent problems in medical education and services for Tuesday evening, and Wednesday morning, then the annual luncheon of the Medical Alumni Association at noon, and the final panel discussion on Wednesday afternoon.

Medicine Rooted in Basic Sciences

The adage that no building is stronger than its foundation applies with peculiar force to Medicine, whose foundation is the Basic Medical Sciences. The former designation of these disciplines as the Pre-clinical Sciences emphasized a demarcation between the laboratory and the hospital ward which, fortunately, has all but disappeared. Good modern clinicians realize that the intelligent care of sick people requires a clear understanding of normal structure and function as a basis for the diagnosis and treatment of abnormal structure and function. The Basic Medical Sciences both support and permeate the Clinical Sciences.

Research in the Basic Medical Sciences is constantly adding to our fund of knowledge concerning Human Biology, and much of this knowledge sooner or later contributes to the development of better methods of diagnosis and treatment of disease. Recognition of this fact has led to ever increasing support of research in the Basic Medical Sciences by both private and federal agencies. The lead articles in this issue of the Bulletin typify the kind of research which is currently being conducted in the Basic Science departments of the University of North Carolina Medical School. These examples, which could be multiplied many times, indicate something of the way in which the Basic Medical Sciences are strengthening and broadening the foundation on which Clinical Medicine can safely stand.

Medicine is both a science and an art. Nothing can (or should) replace the family physician with his deep understanding of the physical and emotional problems of his patients. The science of medicine, rooted as it must be in the basic biological disciplines, increases the skill with which the practice of the art of medicine fulfills its purpose of the relief of human suffering.

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More than 150 local hospital projects—new hospitals, additions to old hospitals, nursing quarters, health centers, and other health facilities—have been built in all sections of the state. The number of counties without any hospital beds has been reduced from 33 to 17. By 1956 approximately 7200 new hospital beds will have been opened in the Tar Heel State.

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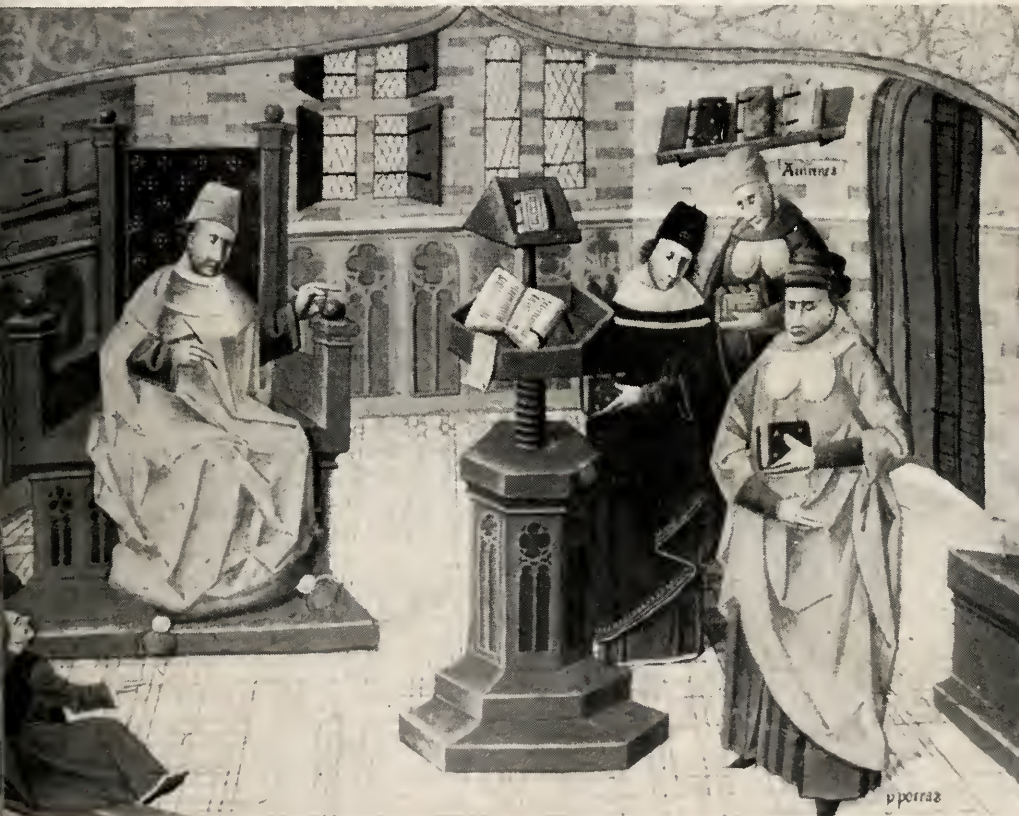
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The BULLETIN

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DIEVAL MEDICAL EDUCATION by lecture: (at left) medical students and lecturer (Guy de
 ac?; (at right) lectern and famous medical authorities (Hippocrates, Galen?, and Avicenna) passing
 ew with their medical works; on lectern and wall shelves, additional books. From a surgical manu-
 of Guy de Chauliac at (BN, 6966, f. 4). (See article by Professor MacKinney, page 2.)

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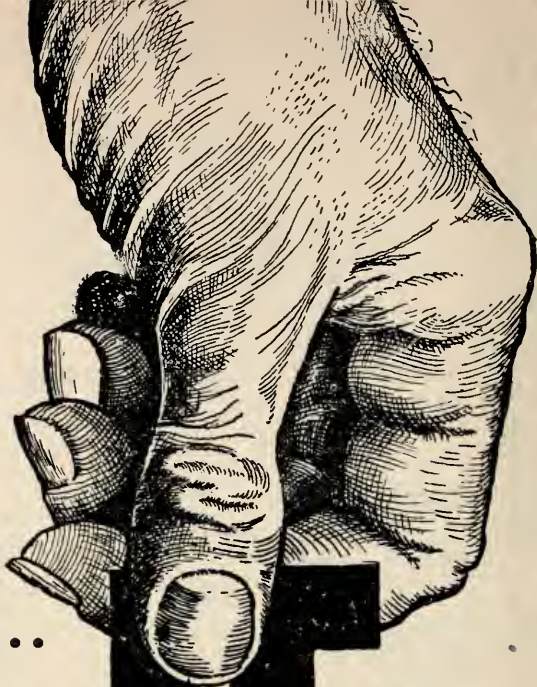
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The Liberal Arts In Medical Education

By Loren C. MacKinney, Ph.D.

In the first century A.D., a Greek physician named Archibios wrote as follows concerning medical education:

"One should train young students from the very beginning in the more necessary things, since 'life is short and the art is long,' as Hippocrates says. For is it not absurd that a student who does not know what cataract, dropsy, etc., are, and does not understand the simplest matters in surgery . . . should concern himself with disputing about moot problems and inquiring What is surgery? How was it discovered? Is it better than dietetics? These questions are not pressing. They are extraneous problems, for the scholar . . . "*

Thus Archibios presented the objection of a practitioner to the wasting of time on broad cultural subjects. As in our own day, however, there were medical educators who stressed the importance of the liberal arts in the training of physicians. In fact, they constituted an overwhelming majority in Graeco-Roman times. Whereas, in our day the liberal arts are considered useful merely as an antidote for excessive specialization, they dominated the profession in the ancient world. Except for illiterate practitioners, Graeco-Roman physicians were subjected to liberal-arts influences from the start. In the schools of grammar and rhetoric (comparable to our secondary schools and colleges), young men studied grammar, logic, rhetoric, arithmetic, astronomy, geometry, and music. In this curriculum there was a smattering of medical history and theory (not, however, comparable to pre-med training today).

Advanced medical training was of two types, theoretical and practical. The theoretical study of medicine was dominated by the liberal arts, through liberal-arts texts and professors in the schools of rhetoric. Cultured laymen such as Varro, Celsus and Pliny the Elder wrote many of the current medical treatises. Similarly, professional physicians such as Galen wrote treatises on logic and the

* Adapted from I. E. Drabkin's translation in an article "On Medical Education in Greece and Rome," *Bulletin of the History of Medicine*, XV (1944) 335.



FRONTISPICE OF an illustrated medieval manuscript of Avicenna's *De Medicina*. This portion pictures a typical university scene: (at left) beadle with mace, lecturer; (at right) students, one holding book; (in foreground) more books and dog with bone. From a manuscript at Glasgow Hunter, 9, f. 1). This and the other illustrations, on the cover, and page 5, are from Professor MacKinney's collection of some 1000 photographs of medical miniatures in medieval manuscripts. They were obtained in Europe with the aid of grants from the University of North Carolina and the American Philosophical Society.

other liberal arts. There was no clear-cut dividing line between layman and professional physician. In fact, most educated men considered medicine to be merely an advanced, specialized, liberal art. It was called an "art," and Varro included it and architecture, after the seven basic arts, in his handbook of the nine "Disciplines" that should be studied by educated men. Two centuries later a Roman gentleman named Aulus Gellius thought that "all cultured and liberally educated men" should know the fundamentals of medicine. "Therefore (he wrote) I devoted such spare time as I had to dipping into books on the art of medicine . . ." It is evident that, for better or for worse, "the art of medicine" was studied, along with the other liberal arts, by laymen as well as medical students, both in and out of schools. Such was possible in an age of relatively simple medical science.

But what of the *practical* training of the advanced student; his "internship" as it were? Such training seems to have been carried on almost entirely outside of any formal school. In fact

there were no medical schools in the modern sense of the word. The so-called "schools of medicine" were little more than schools of thought, or associations similar to modern academies of medicine. Practical training was informal and personal, directed by a practicing physician or a group of state physicians under an *archiater*. Here, and only here, was ancient medical education free from liberal-arts domination. Here also was the realm of technological training.

Strange to say, the ancient tradition of liberal-arts education prevailed after the passing of the Roman Empire and throughout the early middle ages. During this period (ca. 500 to ca. 1100), all education was subservient to religious ideals and personnel. Nevertheless, for *secular* subjects such as medicine, clerical educators followed the example of the ancients. The medical student, from the beginning of his education in a monastic or cathedral school, was exposed to the liberal-arts curriculum of ancient times, with certain medieval modifications. The general handbooks, written by clerical scholars such as Isidore of Seville and Rabanus Maurus, following classical models, included sections on medicine which relied heavily on ancient sources. Educators also used the great medical authorities of ancient times, especially Galen and Hippocrates. Medieval medical education was more classical than Christian in subject matter. Lectures of clerical professors resembled more closely those of Roman professors than those of medieval theologians. Furthermore the well educated man of early medieval times was much like his Roman predecessor in that he was expected to know the rudiments of medicine. One of Charlemagne's edicts ordered all youths to study medicine, along with the other subjects, both religious and liberal, of the curriculum. Obviously such medical education dealt little with technology.

To be sure, there were exceptions, notably at Salerno the much lauded Italian medical center. Until comparatively recent times Salerno has been commonly cited as a lone center of classical medicine in an otherwise dark middle age. As a matter of fact, the evidence indicates that as early as the tenth century Salerno was considered as a medical center where the ancient liberal-arts tradition had been deserted in favor of narrowly practical training. Salerno's reputation for turning out illiterate, but expert, practitioners is reflected in an amusing account, written shortly before 1000 A.D., concerning a French clerical physician who was said to have triumphed over a Salernitan rival who, "though

untrained in letters, had by natural intelligence acquired wide practical experience." In the presence of his patron, the king of France, the cultured clerical physician discomfited the Salernitan, who then attempted to poison him. A poisoning contest ensued, at the end of which the Salernitan's life was saved by an antidote generously provided by his victorious rival. Apart from its incredible factual data and medical ethics, the story indicates the hatred of Frenchmen for Italians, and of liberal-arts intellectuals for illiterate craftsmen. Similar French attitudes are evident until about 1200, by which time Salerno had developed a medical curriculum that included classical and arabic texts and that emphasized the theoretical as well as practical aspects of medicine. Thus, without losing its reputation for training skillful practitioners,

Salerno eventually caught up with the liberal-arts tradition. The resulting balance of technology and culture dispelled the hostility of northern intellectuals, and made late-medieval Salerno a model, praised and visited by patients and teachers from distant regions.



MEDIEVAL MEDICAL EDUCATION
by Dissection-demonstration: (at left) professor directs dissection by surgeon and two assistants; (at right and in background) students, whose dress suggests masters of arts, perhaps fellow professors or advanced medical students. From a manuscript of Avicenna's *De Medicina* at Glasgow (Hunter, 9, f. 10).

This development brings us to the era of the medieval university (ca. 1200 to ca. 1500), which marks the end of medical education's long subservience to the liberal arts and the beginning of the technological progress characteristic of modern times. During this period most universities tended to a golden mean, technical training going hand in hand with the liberal arts. Empirical Salerno broadened its curriculum by adopting something of the ancient liberal-arts tradition. Liberal-arts

universities adopted something of Salernitan empiricism. To be sure, there were exceptions. The University of Paris, a stronghold of liberal-arts scholasticism and French clericalism, clung to past

traditions, even to the point of making the Master of Arts degree a virtual prerequisite for medical specialization. On the other hand, the medical school of Montpellier forbade the taking of any non-medical courses by students of medicine. Strictly liberal-arts courses must be completed before entering medical school, and no holder of a university medical degree might thereafter take an arts degree. All of this was in line with Montpellier's emphasis on intensive empirical training. Incidentally, Montpellier was the first French school to have anatomical dissections. Our first century empiricist, Archibios, would have approved with enthusiasm Montpellier's fourteenth-century curriculum. It represents an extreme in the final escape of medicine from liberal-arts domination. In most universities the adjustment was more moderate.*

Henceforth, the principal bond between the liberal arts and medical schools was the B.A. prerequisite, which prevailed generally throughout the early modern centuries. Often, however, in recent times it has been dropped in favor of the B.S. degree, due to the demands of technical specialization on the medical and pre-medical curriculum. Many present-day medical educators are attempting not only to maintain the B.A. prerequisite, but in addition to find a place for the liberal arts in the medical curriculum. This is an extremely difficult problem. Granted that a medical student has had pre-med liberal-arts courses and perhaps a B.A. degree, how can he find time to continue these broadening influences during the grueling years of medical study? By means of a required course? No. The values and appeal of the liberal arts are subtle, individualistic, and spontaneous. They are life-time, adult interests which are not obtained by forced feeding. Hard pressed medical students need periods of relaxation and recreation, both physical and mental. Why not, for mental relaxation, a series of broad, entertaining, and informative lectures by professors of the liberal arts, with optional attendance, sponsored by a student organization? Psychologically this could provide a zone of quiet in the bustling routine of medical school. Culturally it might serve to carry over the undergraduate contacts with the liberal arts, through the years of intensive medical study, to later years when intellectual and artistic interests can enrich the life of a professional man.

* Data on medieval universities such as is cited in this paragraph has been organized very effectively by Vern L. Bullough in an unpublished Ph.D. Dissertation, *Medical Education in Western Europe in the Fourteenth and Fifteenth Centuries* (Chicago, 1954).

Roundsmanship

By Henry John Bulfinch, '56

They think that they shall be heard for their much speaking.

(Matthew, VI, 7)

Stephen Potter has done great service to civilization by defining certain principles of conduct which he has identified as Lifemanship.¹ This is best illustrated by its fundamental axiom, "If you're not one up, you're one down." Perhaps nowhere is Lifemanship better found than at what at inside* hospitals is called Grand Rounds.

Reflection on the term "Rounds" confirms one's faith in the power of the English language to bewilder. What formerly was an occasion upon which a group of doctors walked together around the wards dispensing knowledge and healing suggestions has become a weekly carnival having for each who attends some special significance. For some, particularly the nurses, it is a refuge from the hurly-burly of their duties; for others, an educational exercise both to give and to receive. For many it is a chance to sit back** and enjoy the passing scene in which the Houseman, the Rowman, and—at times—the Patient, figure so prominently. It is the Housemen and the Rowmen who create the atmosphere of Rounds known to Galen, the Master Roundsmanship, as the "Aura Roundseals," and it is to them, that the principles of Roundsmanship apply.

Between the two, the Houseman and the Rowman, there exists a struggle that is Martian in scope. The Houseman, dressed in white as befits his tender years, is the champion of trial and error. To him is allotted the first move. The Rowman, by contrast, is on the side of accumulated wisdom and clinical experience. To a certain extent he is at the mercy of the Houseman, but even more,

1—Potter S. Lifemanship. Henry Holt. New York. 1950.

*To distinguish them from "outside" hospitals.

**Or, in some cases, to sit hunched forward, head in hands.

Mr. Bulfinch is a student in the Harvard School of Medicine, Class of 1956. This article originally appeared in the Harvard Medical Alumni Bulletin (27: 6, 1953) and is reprinted through the courtesy of Dr. John P. Merrill, Editor.

he is at the mercy of the other Rowmen who occupy the rows or benches in definite order: Frontrowmen, Secondrowmen, and Backrowmen.

I. HOUSEMANSHIP

Since it is the Houseman who arranges the events of the carnival, we must first direct our attention to the rules and general principles which govern his conduct, not overlooking certain pitfalls, and grave errors into which he may fall.

Since the Houseman knows what the events are to be, he has little interest in the show itself other than to practice Housemanship in order that when the hour ends he will be one up and the Rowmen one down. Ordinarily he will do well to see to it that so far as he is concerned the one-downness is not confined to any one Rowman but to all the Rowmen as a group. There are many ways to accomplish this which for convenience we will divide into three categories, Houseman-Rowman play, Houseman-Patient play, and the Proper use of Props.

A. *Houseman-Rowman play*

Since the Houseman makes his first contact with the Rowmen when he begins to present the case at hand, the traditional opening gambit is to give the patient's chart to the Frontrowman who holds the lowest position of those present, rather than to the senior man. This does not necessarily annoy the senior man, but is most effective in irritating the other Frontrowmen because protocol has been so hideously violated. If a Secondrowman has by some indiscretion taken a position in the front row, or if he has been trapped there from a previous rounds, it is most effective play to hand the chart to him.

Another unfailing way for the Houseman to score is to present a case in which treatment has been unsuccessful or some unforeseen dire complication has supervened. This should be reported in a matter-of-fact, rather diffident tone of voice, a "bad-luck-but-there-it-is" sort of attitude. The same situation may also be dealt with by assuming a super-professional, calm demeanor, talking down to Rowmen in much the same manner in which the anxiety of the patient's family was allayed on the previous day.

This is potentially disastrous play, however, which may well leave the Houseman "one down" if the Frontrow is united in its horror of the direct violation of time-honored custom. Wise is the Houseman who splits the Opposition by injecting into his

presentation a non-sequitur about which there is an emotional rather than a rational disagreement.

In Housemanship the element of mystery must never be neglected. The point of the presentation and the nature of the problem should be suitably obscure. The advanced Houseman can bring the Rowman to a point of frustration at which he will attempt to elicit the essential information by questions that he will hardly dare ask for fear that the information has in fact been given out but that due to his inattention he has missed it. To ask for it now would make him lose face. Whether he asks for it or not, it is good Housemanship to have created the conflict.

Much can be made of presenting a patient *en surprise*, that is, failing to notify the Rowman who has operated upon the patient that his handiwork is to be on display. The Rowman will, therefore, have no prepared remarks and will not, it is hoped, have had time to look up the one significant article on the subject. He will thus be torn within himself as to how much to say about the case. Conflict again will have been created. The situation can be further exploited by the Houseman if he makes a point of removing the appropriate volume from the library several days before and perhaps even reading from it after the Rowman has stammered out his garbled and ineffectual words.

In the same vein, a situation of strength can be created by inviting a member of the Medical Staff to discuss a case with a prepared speech and slides for perhaps thirty minutes of an hour in which the showing of six cases has been planned. Though this may contribute greatly to the education of the representatives of the Nursing School and Medical Arts Department seeded among the Backrowmen, it produces little but a restless ferment among those down front.

B. *Houseman-Patient play.*

The trained Houseman becomes expert in his handling of the patient. Nothing, for example, so breaks the ice as the presentation of an infant surrounded by all the trappings of childhood; balloons, stuffed animals and the like. On such occasions the close observer will be mildly startled to see several of the Frontrowmen surreptitiously trying to win the attention of the tiny patient who according to time-honored custom is presented as "Mister" or "Miss" Bizbee. At the other end of the scale, a spry elderly patient should be introduced as of something greater than her actual age. This will be immediately corrected by the patient and

if the Houseman can then manage to blush prettily, he has scored again. By contrast, it is distinctly poor play to ask the patient how he or she feels since only one reply is acceptable.

Many broad points of policy must be decided in the handling of patients. Much can be said for rushing the bed in and out so fast that no one can be sure whether or not it actually contained a patient. By contrast, the patient may be kept throughout a long and complicated presentation, during which preferably he should lie curled up in a ball, back to audience, with face covered. A particularly effective form of Housemanship is to present three to five patients at once, so that the amphitheatre furnishes a scene of intense activity not dissimilar to a Bruegel canvas.

Bed crashing is best reserved for patients who are no more than one day post-operative. As the bed is run solidly against the door jamb, a barely audible murmur of "shame, shame" can be made out running through the audience. If the bed in question is equipped with a five-pint bottle hanging from its side, the effect is heightened. A particularly useful maneuver is to arrange that a constant drainage catheter or common-duct tube should drain not into the bottle, but onto the floor during the presentation of the case.

C. *The proper use of props.*

Aside from the patient and his various appurtenances, the Houseman has at his disposal only a few props, chief among which is the x-ray viewing box. With proper use, however, much can be made of this. It is axiomatic, for example, that at some time during the rounds films should be displayed in a reversed position—so called *situs inversus radiologicus*. The combinations possible with spotfilms are inexhaustible. A particularly useful maneuver is to drag the viewing screen forward so that all may inspect the films more closely. At the critical moment the light cord to the apparatus becomes inadequate and all is dark. Great effect can then be created in the efforts to restore illumination.

Much can be done by the proper use of the pathological



"... Pathological Specimen."

specimen. During the presentation of the patient, it should be kept in a prominent place discreetly covered by a voluminous pile of wet rags or sodden paper towels. It should always repose upon an evil-looking enameled platter or in a battered and obviously contaminated basin. As the patient is wheeled out, the trophy is then triumphantly unveiled, quickly thrust upon the nearest Frontrowman with the suggestion that it be circulated freely so that all may share its contagion. So far as possible it should be arranged that the pathologist has taken sufficient sections from the key point of the specimen so as to make orientation virtually impossible.

II. FRONTROWMANSHIP

The Frontrowman occupies a key position in the structure of Rounds. His place is more than to sit in judgment, he represents continuity and accumulated wisdom. This is to be scattered among the pilgrims who have come to learn. At the same time, he must defend his place among his peers and guard himself from the Houseman. His techniques are many.

The authority and stature of a Frontrowman is often demonstrated by the degree with which he undertakes to converse with his neighbor while a case is being presented or another individual is discussing it. In effect, he creates a diversion. If this is aimed at the Houseman, it can be made most effective by inclining one's head towards a neighbor, looking the Houseman directly in the eye and asking in a stage whisper, "What's this boy's name?" The answer, "Don't know—must be a striker," virtually assures triumph.

A very useful form of Diversionship is to whisper to one's neighbor in tones inaudible even to him some witticism of any quality, followed immediately by a loud chortle or scarcely subdued laugh. The neighbor can only nod his head vigorously and smile wanly. The impression, however, will have been created among the Houseman and Rowmen alike that some priceless thing has been said or done which they in their dull-witted or inattentive state have failed to appreciate.

There is the technique for capturing the center of the verbal stage by the judicious interruption. This requires finesse that comes of years of experience and should be done in a way that the other members of the audience relish. Perhaps the surest method is that of the interrogative sentence. This is a question which during its first few words sounds as if the asker were really

requesting information. A deft Frontrowman, however, can easily, without drawing breath, allow the words to reorient themselves so that instead of asking, they tell. Thus, if a patient has had necrosis of a colonic suture line following resection, one can say, "Knowing very little about these matters, I should like to ask whether you don't think it is wise to examine the bowel near the resection edge for pulsating vessels?" One thereby creates the effect that (1) he knows a great deal about these matters; (2) that with razor sharpness he has come straight to the heart of the matter.

No positive statement on the part of a Houseman or Second-rowman should be allowed to pass without some qualification by a Frontrowman. This can often best be done by citing from one's own experience examples of somewhat similar cases which really have little bearing on the subject at all. For instance, if a patient is presented as an example of the benefits of a given treatment A, the deft Frontrowman will not discuss treatment A (with which indeed he has had no experience), but merely describe with warmth and humor a case which he has handled with brilliant effect by treatment B, the method long established as the best, although not always adequate, one.

Complete denial of a positive statement made by a Junior is best handled by Distortionship. After a judicious interruption, the Frontrowman proceeds sonorously down the verbal stage with a definite sequence of moves: (1) expression of great interest in what Doctor Doe has said; (2) direct misstatement of Doctor Doe's argument prefaced by "If I understand you correctly"; (3) entire agreement with the revised, mirror-image version of Dr. Doe's argument. An authoritative impression of good fellowship is thus created except in Dr. Doe whose meaning having been exactly reversed by Dr. Frontrowman, realizes that he has been had again.

The courageous and righteous castigation of the Houseman for some minor error in the handling of a case is always effective in creating an impression though it can only be done by One Who Has Arrived. The Frontrowman, however, must be continually *en garde* lest he is being mouse-trapped into a display of platitudes. A method of correction that invariably succeeds is to read from the record any significant item which, in his presentation, the Houseman has failed to incorporate, or has quoted incorrectly. Much can be gained by an obviously careful perusal of a patient's new, or old, record, with an occasional aside to one's

bench-mate. Unless the Houseman is exceedingly well briefed in the case at hand, or has taken the precaution to see that the record has not fallen into the hands of a known Record-reader (see Sec. A, Part I, Housemanship) he can usually be put completely off balance.

Humility has many uses to the Frontrowman. Should a Backrowman ask a question that defies answer, the alert Frontrowman will hesitate, verbally, to reply to the question. Then, while pleading *nolo*, he will nail another Frontrowman by tossing the ball directly in his lap, thus: "Perhaps Doctor Throop would be willing to answer that question since he knows more about these matters than I." Dr. Throop, of course, does not, but feels impelled to say something. This thoroughly discredits him for the balance of the Rounds and Frontrowman A emerges as the humble handservant of Truth. The Backrowman is more confused than ever and wishes that he had not asked the question. The whole episode serves to discourage further questions from the Backrowmen and thus a proper Aura Roundsealis is preserved.

A successful gambit may be occasionally achieved by complimenting the Houseman and his associates effusively on the management of a case. This is particularly effective if the patient really represents a rather mediocre result of what is, at best, a questionable form of treatment. The Frontrowman should purposely misinterpret the result to be an excellent one. This ostensibly magnanimous maneuver creates a sense of uneasiness in the

Houseman who knows the result is not a good one, knows that the Frontrowman knows, and cannot understand his motive in using the Patronship play.

There is one prestige maneuver, namely Camaraderie-ship, that is of great utility. In essence, Frontrowman A, finding himself cornered in argument with colleague B, quotes as his authority leading figures in other medical capitals whom he refers to by their nicknames, thus: "When I was last in London, Archie Heneage told me



" . . . the international set."

that he had given up cutting the stem cryptoleus and relies entirely upon drainage through the ptyaloid apparatus." The drawback to this form of play is obvious. Frontrowman B, having been given the green light, may be able to quote celebrities faster than A. If play is then conducted along these lines, much prestige may be lost by both A and B as nicknames fly back and forth like pillows in a pillow fight. A surer form of Camaraderieship is to introduce a member of the international set to the front row. If this figure can then be lured into making a few suitably obscure remarks or will, at the appropriate moments, nod and grunt knowingly, his sponsor has indeed scored.

III. SECONDROWMANSHIP

The Secondrowman may be considered a larval stage. He will fall into one of three categories: assistant surgeons of the regular staff, middle-aged regular attendants at Rounds who possess considerable stature in their own "outside" community, and Fourthfloormen.* The Secondrowman operates according to the general rules of order laid down for his seniors. Thus he may create a diversion, interrupt, qualify, distort, be humble or expound.

The Secondrowman ordinarily should be humble, with one exception to be noted later. Thus he should apologize for the presentation of one of his cases in some such manner as: "I thought at the last minute that it would be worthwhile to bring this patient down since he perhaps illustrates one or two interesting points." This creates the impression that in the rush of practice he has been able to gather his wits long enough to recognize a problem when he sees one, but not long enough to prepare a discussion of it. The discussion which follows must be carefully given in a halting and hesitating manner so as not to betray the two hours of rehearsal which had been secretly devoted to it the night before.

The Secondrowman, middle-aged-regular-attendant type, is expected to look pleasant and relaxed and to say very little. He should, however, fill in the awkward gaps in the proceedings which occasionally occur, by telling of an interesting case with which he has just been confronted. This should never be done with an air that would lead anyone to suspect that such cases are not

**It is recognized that this term may be a local one and perhaps Researchman, or even, as some have suggested, Trainedsealman, might be more appropriate. However, the "Fourth Floor" is so distinctive a place, the author has chosen to preserve this terminology.*

often seen in this large teaching center. It should be accompanied by an earnest attitude as if seeking guidance and advice. Since no advice will be forthcoming the remarks should be brief.

The Fourthfloorman's contribution to Rounds should be preserved as a very special one. He has come to deliver a Message and the Message will be good. He should come to Rounds early and be discovered checking formulae that he has put upon the board by doing quick calculations in the corner using Greek letters and a slide rule. A bit of unusual apparatus which blinks balefully and which emits ominous and cosmic ticking sounds can create a superb atmosphere of suspense and anticipation. The Message must be a crisp one. It need not instruct. It need not be clear. But it must be authoritative. Camaraderieship is usually out of place, but there should be implied a complete familiarity with and mild contempt for other prominent workers in the field, their co-workers and their laboratories.

If the Message has been delivered correctly, there will and should be no discussion. An admiring silence will ensue, broken only by the Houseman jouncing in the next patient, who, if the Fourthfloorman has arranged things properly, should represent the most banal of problems such as a case of appendicitis treated by appendectomy.

IV. BACKROWMANSHIP

Backrowmanship, as has been implied above, is merely the art of sitting still.

NEW BOOKS RECEIVED

Miss Myrl Ebert, Librarian, Division of Health Affairs Library, reports the following outstanding titles recently received:

- Ramazzini, Bernardino. *A treatise of the diseases of tradesmen* . . . London, Bell, 1705. 274 pp. (First English edition of first and most important book on industrial and preventive medicine.)
- Allen, Arthur C. *The skin; a clinicopathologic treatise*. St. Louis, Mosby, 1954. 1048 pp.
- Goff, Charles W. *Legg-Calve-Perthes Syndrome and related osteochondroses of youth*. Springfield, Ill., Thomas, 1954. 332 pp.
- Little, Clarence C. *Genetics, biological individuality, and cancer*. Stanford, Stanford University Press, 1954. 115 pp.
- Kitay, Julian I. and M. D. Althschule. *The pineal gland; a review of the physiologic literature*. Cambridge, Harvard University Press, 1954. 280 pp.
- Steiner, Paul E. *Cancer: race and geography* . . . Baltimore, Williams & Wilkins Company, 1954. 363 pp.

Doctor Peacock At Work At Chapel Hill

By Audrey Turner

A wise man once said, "Ideals are like stars; you will not succeed in touching them with your hands."

The gentleman should have met Dr. Erle Peacock. Reconstruction of the hand is the field in which this young Senior Resident in Surgery at the North Carolina Memorial Hospital is attempting to translate his ideals into action.

Dr. Peacock has the look of a man who knows where he is going, how to get there, and what to do when he arrives. In the field of reconstructive surgery of the hand, his work is becoming well known. He is quick to point out, however, that credit for his accomplishments belongs to the men who have been instrumental in guiding him along the way.

His association with Dr. J. William Littler of the Roosevelt Hospital, New York, has been of particular importance to Dr. Peacock.

"He is the man I would most like to be like," says Dr. Peacock, simply and frankly.

It was during his internship at the Roosevelt Hospital in 1949 that Dr. Peacock worked so closely with Dr. Littler, who was previously Chief of the Army Hand Center at Valley Forge. When, in the summer of 1951, the Korean War broke out, Dr. Peacock volunteered. With Dr. Littler as Civilian Consultant, Dr. Peacock received a direct assignment to Valley Forge, as Acting Chief of the Army Hand Center. Each Sunday he drove to New York from Philadelphia, picked up Dr. Littler, and returned to Valley Forge. Monday was spent in the operating room. At the time of his discharge, Dr. Peacock had performed over 1500 major hand reconstructions. He was then twenty-six years old.

After his release from the Army, Dr. Peacock heeded the advice of Dr. Nathan Womack, Chairman of the Department of Surgery here, and decided to return to North Carolina to complete his experience in general surgery before going on to work

Miss Turner is a Secretary in the offices of the Departments of Medicine, of the School of Medicine of the University of North Carolina at Chapel Hill. This is the first of a series of articles about people on the house staff of the North Carolina Memorial Hospital and in the laboratories and classrooms of the School of Medicine that Miss Turner will do for The BULLETIN.



DR. PEACOCK in the operating room at work reconstructing an injured hand.

at his special interest, reconstructive surgery. Thus he returned to the North Carolina Memorial Hospital as Second Year Resident.

North Carolina is truly home to this young physician. Born in Chapel Hill, he graduated from the University of North Carolina, and took his first two years of medical school here, with time out for duty in the Navy during World War II. In June, 1949, Dr. Peacock received his M.D. degree from Harvard Medical School. Back in the Tar Heel State, Dr. Peacock married a UNC co-ed, Mary Lowrey, in April, 1954.

His exhibit of splints for the injured hand won second prize at the American Academy of Orthopedic Surgery at Chicago in January, 1952. He has published four papers on his work, with a fifth in press.

At present, Dr. Peacock is shuttling between the North Carolina Memorial Hospital and the State Hospital at Butner as a part of the program to round out his surgical training.

"Do I have any spare time?" Dr. Peacock asks with a slow smile. "Sure. Right now I'm Scoutmaster for a local Boy Scout troop."

Millions Contributed by Medical Schools

Nathan A. Womack, M. D.

At the beginning of the 19th century there were only four medical schools in existence in America. While all of them were associated with colleges or universities, operating costs were borne almost completely by tuition. There would be a series of lectures over a period of approximately two years, and these would consist of talks on anatomy, physiology, chemistry and various aspects of clinical care such as medicine, surgery and materia medica and obstetrics. The student paid for a series of lectures or even sometimes tickets were sold for individual lectures. This type of commercialization of the educational process led to such a low quality of teaching that leaders in the profession in order to obviate it established in 1847 an organization called the American Medical Association. By and large this organization has held to an active interest in the betterment of medical education and medical care for the people of our country.

In 1908 the Carnegie Foundation for the Advancement of Teaching sought to appraise the field of medical teaching both in America and Canada. This study was placed in the hands of Abraham Flexner, and in 1910 he turned in a report that proved to be revolutionary in its effect. His criticism was frank and his recommendations drastic. A large number of schools were forced to close their doors because of the inability to obtain funds to meet the recommended standards, while others sought and obtained university connections. In the period between 1910 and 1920 medical education was established in this country as a university function with the standards and disciplines associated with a good university education. It is fortunate that several excellent schools had already led the way.

Immediately, universities were confronted with the problem of financing such a program. By and large the tuition that the medical student pays falls far short in maintaining the cost of the school. Endowments and tax supplements have been

Dr. Womack is professor of Surgery in the School of Medicine of the University of North Carolina at Chapel Hill.

of inestimable aid, for the cost has been climbing rapidly. In 1927, for instance, it was estimated that the cost of operating the medical schools in the United States amounted to approximately \$13,000,000. In 1951 the 79 medical schools in this country spent approximately \$106,000,000 and this was exclusive of hospital costs. In 1927 the cost of educating the medical student was estimated at \$700 a year, while in 1945 the Council on Medical Education and Hospitals estimated that the average expenditure per student was \$2,577 per year. This rise in cost has been of concern not only to the medical educators but particularly to university administrators. They have seen the financial structure of their colleges and universities overtaxed as the result of these huge costs and many of them, perhaps rightfully, have felt that the proper development of a good medical school hampers the facilities for expansion of other important phases of university endeavor.

When these figures are analyzed carefully, however, the problem becomes much more complex and not so forbidding. It can be seen at once that money invested in the budget of a medical school is by no means limited to the teaching of undergraduate medical students. Except where particular grants in aid from the outside are received, most of the important fundamental research in medicine is financed out of this budget. Again, many students besides those seeking an M.D. degree receive part of their education from the faculty of medicine. This is particularly true of dental students, of nurses, medical technicians, pharmacy students, graduate students in various courses in science and graduate and postgraduate students in medicine. One function that is not often considered is the free professional service given by the clinical faculties of medical schools both in out-patient and in-patient service to people who could not afford to pay a regular physician's fee. In a recent survey an effort was made to estimate the approximate dollar value of such services based on a scale of professional fees utilized by the Veterans Administration for the payment of private physicians in its home care program. It was estimated in this study that the 72 four-year medical schools contribute annually approximately \$100,000,000 worth of professional services. This figure is highly significant when compared to the \$106,000,000 expended for the whole complex of medical education. It would seem that although the university administrations are at times being pinched because of the cost of their medical school, the public as a whole has made a good investment.

Abstracts from the

Research Conferences School of Medicine

A forum in which the results of investigative work can be reported and discussed is afforded by the School of Medicine Research Conference held on the last Thursday evening in each month at 7:30 o'clock in Room 324 of the School of Medicine Building. The meetings are open to all persons interested.

The Editors of The BULLETIN present here abstracts from several of the presentations, and hope to include other abstracts in subsequent issues. A news story under Faculty Notes (see page 28) details subjects and participants for conferences scheduled for the remainder of this session.

I—Metabolism of Methylated Monosaccharides

By T. Z. Csaky, M.D., Assistant Professor of Pharmacology

The absorption of various sugars by different cells is a complex process which has not yet been sufficiently clarified. Undoubtedly this process requires the expenditure of an extra amount of energy by the cells. In the case of "natural" sugars, viz. sugars which occur in the body or in food, a certain proportion of these sugars is utilized to provide energy for their own absorption. Therefore, the study of the chemical changes which occur in the sugar molecule during the process of penetration into the cells becomes a complex and difficult problem. Certain "unnatural" sugars, viz., sugars which do not occur in nature but are synthesized in the laboratory, appear to be absorbed in the same way as the "natural" ones. However, they are not burned in the body and thus they are not a source of energy. For this reason the process of absorption can be studied separately from energy production by using "unnatural" sugars.

This paper describes experiments in which the absorption from the intestine and from the renal tubuli of certain "unnatural" monomethyl compounds of sugars was studied. On the basis of result obtained theories were proposed to explain the nature of active absorption.

II—Functional Changes in Shortened Muscle

By Byron A. Schottelius, M.D., Instructor in Physiology

The mechanical and excitation properties of experimentally shortened muscle are of interest because of definite resemblances to clinical states, and also because of speculative relationship to the fundamental theoretical problem of muscular contraction.

Extreme and prolonged *in situ* shortening of rat gastrocnemius muscles was produced by tetanus toxin injection, by tenotomy and by immobilization in plaster casts. Fourteen days after the initiation of shortening, studies were made of the optimal length for tension development, the tetanus-twitch ratio, the optimal stimulation frequency, and the temporal relationships of twitch responses.

Considerable changes in mechanical and excitation properties were found. These changes varied from one experimental state to the next. From certain theoretical calculations it was tentatively suggested that the fundamental alterations were in the elastic components of muscle.

III—"Die Frauen von Tenna"—A Recent View

By K. M. Brinkhous, M.D., Professor of Pathology

The Tenna bleeders, a large Swiss family, appear to have the most carefully established pedigree which goes back to the 17th Century. Originally these bleeders were considered to be hemophiliacs, but recent studies have shown that they have instead hemophiloid state C, or Christmas disease. The inheritance of the disease in this family is sex-linked, as in true severe hemophilia.

Unlike classic hemophilia, certain of the women who transmit the disease appear to be mild bleeders. This is believed to be partial expression of a recessive gene, and resembles in this respect a mild bleeder disease previously studied in North Carolina by Graham and McLendon, an allelic form of true hemophilia.

The value of restudying old pedigrees in the light of new research findings in the clotting field was emphasized.

IV—Research Studies in Hemorrhagic Diseases

By Jessica H. Lewis, M.D., Research Associate in Physiology

Detailed studies in over one hundred patients with bleeding tendencies have shown that this hemorrhagic tendency may be either *congenital*, i.e., inborn, or *acquired*, often in association with another disease.

Congenital bleeders may be classified into three main types: vascular, platelet or plasma, according to which one of the hemostatic factors is at fault. Vascular purpuras include Hereditary Hemorrhagic Telangiectasia and Pseudohemophilia.

Congenital platelet purpuras include Thrombocytopenias, i.e., decreased number of platelets and Thrombocytopathias, i.e., normal number of platelets with decreased function.

Plasma purpuras include Hemophilia, Plasma Thromboplastin Component (PTC) Deficiency, Plasma Thromboplastin Antecedent (PTA) Deficiency, Hypoprothrombinemia, Hypoproconvertinemia, Hypoproaccelerinemia and Afibrinogenemia.

Acquired bleeding tendencies are rarely due to a single abnormality, but may be classified as primarily vascular, platelet or plasma in type. In addition to deficiencies of hemostatic factors, platelet or clotting inhibitors of various types may be present.

V.—Alterations in Serum Electrolytes in Response to the Inhalation of Carbon Dioxide

By David A. Davis, M.D., Professor of Surgery in charge of Anaesthesiology.

There has been considerable interest in the effects on circulation produced by the retention in the body of abnormal amounts of carbon dioxide. This condition is encountered in patients with diseases of the lungs, in poliomyelitis, in thoracic surgery, and in most persons during surgical anesthesia. Peculiarly, the effects on the heart seem more striking during the return to normal than during the period when carbon dioxide retention is greatest.

During the retention of carbon dioxide, sodium, potassium, and phosphorus appear to leave muscle. Glucose leaves the liver in enormous quantities, and the extracellular fluid space expands.

When the excess of carbon dioxide is removed suddenly, these changes are even more marked. Potassium in the serum is increased strikingly and apparently is released from the liver. At the same time it seems to go back into muscle.

During the return of carbon dioxide to normal, marked changes in the electrocardiogram may be observed. It is possible that changes in the circulation are due to these extremely rapid changes in electrolytes which accompany changes in carbon dioxide.

This work has been carried out by Mr. Sam Jovner, a senior medical student, with Drs. Dan T. Young, Louis Welt, and Ernest Craige of the Department of Medicine, and Dr. Davis.

VI—Some Problems of Genetic Interpretation Arising from Study of an Inherited Skeletal Abnormality

By John B. Graham, M.D., Associate Professor of Pathology

A mutant gene for split-hand was discovered segregating in a large kindred in central Michigan. The proband was ascertained when brought to the University of Michigan Hospital for orthopedic evaluation and treatment. In completing the pedigree for six generations, information was obtained on 165 persons. Five additional affected persons were discovered by this means. Four of the six affected individuals were examined personally, and x-rays of hands and feet obtained on all six. In addition, the sibship in the fourth generation from which all affected persons were descended was examined physically and roentgenologically.

The disease was apparently transmitted by one dominant mutant gene. However, the distribution of affected individuals might have resulted either from lack of penetrance or multiple mutation in generation IV. (It was also necessary to assume "cluster" mutation under the multiple mutation hypothesis.) The probability of multiple mutation being extremely small, lack of penetrance appeared more likely. Of interest also, the expressivity of the responsible gene obviously increase over three generations. The explanation of this observation under conventional genetic theory required a complex model involving changing frequencies of several suppressor genes.

VII—Radiophosphorus Uptake in Bladder Tumors

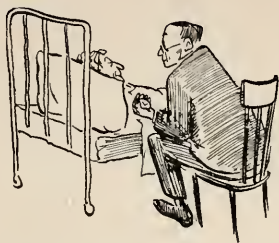
By Paul L. Bunce, M.D., Assistant Professor of Surgery (Urology)

About one-fifth of patients having "benign papillomas" of the urinary bladder eventually develop frank invasive carcinoma in spite of accepted treatments.

The ultimate goal of this investigation is the determination of utility and accuracy of a radioactive tracer method in further classification of these so-called benign tumors.

The first step was to show that bladder cancer cells take up more radiophosphorus than normal bladder mucosa cells. In four patients with extensive bladder cancer the P^{32} uptake by the cancer was found to be two to six times as great as by normal bladder tissue.

At the present time there is insufficient data to make any statement about classification of the benign lesions, a long term post-operative period of observation being necessary.



ALUMNI NOTES

Earle F. Spaugh '48, completed a residency in Pediatrics at the North Carolina Memorial Hospital in Chapel Hill in December. He opened his office in Charlotte in January.

Shirley River, '48, is continuing her training at the Memorial Center for Cancer and Allied Diseases in New York City.

James A. Ewart, '48, recently completed a residency in internal Medicine at the Brooke Army Hospital in San Antonio; he is currently attending an advanced class for Medical Corps officers at the Medical Field Service School there. His address is: 1068 Ivy Lane, San Antonio.

William B. Harris, '50, writes that he is on the Professional Service Department staff of Lederle Laboratories doing clinical research in the West Coast Region; his address is: T. A. Box 2202, Los Angeles 54, California.

John H. Miller, Class of '42, is now practising in Bartow, Florida. He and Mrs. Miller have recently established a student loan fund in the School of Medicine.

George Robert Clutts '54, has recently opened his office for the practice of general surgery in Greensboro. He is located at 324 North Elm Street.

A Christmas card from J. Hicks Corey, '54, indicated that he is now in England. His address is: 70 Herga

Court, Harrow-on-the-Hill, Middlesex, England.

Luther W. Kelly, Jr., '46, joined the staff of The Nalle Clinic in Charlotte in Internal Medicine.

G. Denman Hammond, '46, is currently a member of the Department of Pediatrics at the University of California School of Medicine; his address is: 851 Forty-fifth Avenue, San Francisco 21, California.

C. Roy Rowe, '47, was a member of the house staff in Surgery at the North Carolina Memorial Hospital for several months this year; however, he has been called into service and is now stationed at the U. S. Naval Hospital in Portsmouth, Virginia.

Dr. Eben Alexander '02, is doing the surgical work for 2,600 patients at Eastern State Hospital, Knoxville, Tenn. Long a surgeon in Knoxville, he tried retirement for a year but has given it up.

Dr. Henry B. Perry '03, Boone, who spent a year at Chapel Hill before transferring to the N. C. Medical School in Charlotte where he received his M.D. in 1905, has practiced medicine in Watauga County for 49 years. He was elected this fall to serve as State Senator in the 1955 Legislature, representing the 29th Senatorial District. He also served in the 1949 Legislature.

ANNIVERSARY IN APRIL

Three panel discussions, the alumni dinner, and several other events are being planned for the celebration of the seventy-fifth anniversary of the beginning of Medical Education at Chapel Hill. The dates are April 12-13. Dr. W. P. Richardson heads the special committee completing plans for the event.

The program opens Tuesday evening with a panel on "The State University and Medical Care in the State," with Major L. P. McLendon, Greensboro, as moderator.

The Wednesday morning panel will be moderated by Dr. Joseph Hinsey, Dean of the Cornell School of Medicine, on the general topic "Financing Medical Education."

Wednesday afternoon, the panel

topic will be "Humane Letters and Human Illness." The panelists will be a group of distinguished members of the liberal arts faculty of the University of North Carolina, with Dr. Sterling Stoudemire, of the Department of Romance Languages, as moderator.

The alumni meeting will be held at dinner Wednesday evening, with the president, Dr. Fred C. Hubbard, in charge.

Invitations will be sent out later. It is hoped that all alumni will plan to attend, and bring with them others interested in the whole program of medical education, with special emphasis on the work at Chapel Hill. The panels cover such a range of subjects that public-minded citizens will find them interesting and instructive.



STUDENT ACTIVITIES

Mr. and Mrs. William B. Wood (he's a Junior Medical student) welcomed William B., Jr., on Dec. 5. Young Bill weighed in at 6-8. His mother is the former Virginia Ferguson of Winston-Salem.

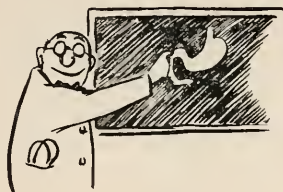
J. Gray McAllister, III, of Chapel Hill, a senior in the University, is spending his senior year as a student fellow in pathology. Most of Mr. McAllister's time will be spent doing research.

The medical school class of 1958 is made up of 65 North Carolinians and one out of state. These students are alumni of the various state col-

leges and universities, 40 from U.N.C., 11 from Davidson, six from Duke, three from Wake Forest, six from other schools. Thirteen of the members are married and several have children. Eleven members are veterans of the various armed services.

Elections were held and David Crosland won the presidency. Ellis Aboud is vice-president, Al Hamen is secretary, and Bob Storey is treasurer.

After the mid-term exams were over the class celebrated with a big get-acquainted party at the Country Club. The professors were also invited and a good time enjoyed.



WITH THE FACULTY

RADIOLOGY

Dr. Charles A. Bream, attended the 40th annual meeting of the Radiological Society of North America, held in Los Angeles early in December.

Dr. Bream addressed members of the Edgcombe-Nash Medical Society at Rocky Mount on January 12. He spoke on "Special Radiological Procedures and Their Indications."

Dr. Ernest Wood spoke to the New England Roentgen Ray Society in Boston, on October 15, 1954, on the subject "Myelographic Diagnosis."

Dr. Edwin P. Hiatt and Dr. Jessica H. Lewis will attend the meetings of the Southern Society for Clinical Research in New Orleans, January 27-30.

Dr. John H. Ferguson will attend the Symposium on Blood, January 22 in Detroit, Michigan.

DR. ANDREWS IN FORMOSA

Dr. James C. Andrews, Head of the Department of Biochemistry and Nutrition, is presently in Formosa. Dr. Andrews is acting as consultant for the Foreign Operations Administration to the School of Medicine, University of Taiwan during the period January 1 to July 1.

Dr. Andrews will return to Chapel Hill September 1, 1955. During the absence of Dr. Andrews, Dr. Carl E. Anderson is acting head of the Department of Biochemistry and Nutrition.

SURGERY

Dr. Nathan A. Womack has been appointed to the National Scientific Council of the City of Hope Medical Center in Duarte, California. He was out there December 15-19.

Dr. Beverley Raney and Dr. H. R. Brashear, Jr., went to Los Angeles at the end of January to attend the meeting of the American Academy of Orthopedic Surgeons. Dr. Raney is chairman of the instructional course program of that group.

MEDICINE

Dr. Isaac M. Taylor has been granted a leave of absence from the Department of Medicine effective January 1, 1955, and reported to Bethesda, Md. for service in the Navy, January 15.

Dr. Christopher Fordham, a trainee in the Department of Medicine, presented a paper entitled "A Study of the Osmometric Behavior of the Human Red Blood Cell" at the meeting of the American Federation for Clinical Research in New Orleans, La., on January 28.

Mr. Samuel B. Joyner, fourth year medical student, presented a paper entitled "An Analysis of the Chemical Events and Their Interrelationships with Alterations in the ECF during Respiratory Acidosis and Alkalosis," at the Southern Society for Clinical Research in New Orleans on January 29.

Other members of the Department

attending the New Orleans meetings were Drs. Charles H. Burnett, L. G. Welt, W. F. Williams and Walter Hollander.

Dr. Thomas W. Farmer attended the meetings of the Association for Research in Nervous and Mental Diseases, the Eastern Association EEG Conference, the American Academy of Neurology Research Committee, and the meeting of the Myasthenia Gravis Foundation in New York City, December 9-12, 1954.

Drs. Burnett and Welt participated in the American College of Physicians program in Durham on December 9, with Dr. Burnett taking part in the Clinico-Pathological Conference with Dr. Bernard F. Fetter, of Duke, and Dr. Welt presenting a paper entitled "Significance of Hyponatremia with Edema."

Dr. A. A. G. Lewis, of the Middlesex Hospital, London, England, was a visitor in the Department, December 13, 14; and Sir Lionel Whitby, Regius Professor of Physic at the University of Cambridge, Cambridge, England, was a visitor in the Department on December 16.

OBSTETRICS AND GYNECOLOGY

Dr. Robert A. Ross was on the program of the Florida Obstetrical and Gynecological Society in Jacksonville, December 1-3.

Dr. Ross, Dr. Charles E. Flowers, and Dr. Leonard Palumbo attended the combined meeting of the American Congress of Obstetrics and Gynecology and the American Association of Obstetricians and Gynecologists in Chicago, December 12-14. Dr. Ross and Dr. Flowers appeared on the program.

Dr. Ross spoke at the United States Naval Hospital in Portsmouth, Va., December 16; and in Montgomery, Alabama on January 14, where he

addressed that State's group of the College of Surgeons.

Dr. Ross and Dr. Deborah Leary will attend a meeting of the South Atlantic Obstetrics and Gynecology Society in Williamsburg, Va., February 10-12.

Dr. Flowers is scheduled to speak to the Charleston County Medical Society in Charleston, S.C., February 7.

Dr. Palumbo will speak to the Medical Society of the Fayetteville area in Roseboro, N.C., on February 8.

PEDIATRICS

Dr. Edward C. Curnen attended a Conference on "Biology of Poliomyelitis" in New York City on January 20th and 21st. This conference was sponsored by The New York Academy of Sciences.

Dr. Curnen participated in a panel discussion on January 24th at the Supervisors' Annual Conference of the Local Health Departments of North Carolina which was held in the Health Education Workshop of the University of North Carolina.

Dr. Curnen was the guest speaker at the Clinical Radiological Conference on January 25th at Lenoir Memorial Hospital, Kinston, North Carolina.

AT CHAPEL HILL

The third annual three-day post-graduate course in general medicine and surgery has been announced by the Office of Continuation Education for Tuesday, Wednesday and Thursday, March 8, 9, 10, at North Carolina Memorial Hospital.

It is planned that each full day will be devoted to the comprehensive coverage of one topic. One day will be devoted to gastro-intestinal diseases; another day to gynecological problems, including psychiatric aspects of menopause, sterility and dysmenorrhea; and the third day to pulmonary diseases.

DR. CAFFEY HERE

Dr. John Caffey was guest lecturer at the University of North Carolina School of Medicine on January 18 and 19 when he spoke at both afternoon and evening meetings.

Dr. Caffey is Professor of Radiology in the College of Physicians and Surgeons, Columbia University, and Radiologist and Attending Pediatrician to the Babies Hospital and Vanderbilt Clinic, New York.

MEDICINE ON TELEVISION

Thirteen programs have been arranged on maternal and child health, for telecasting over the University of North Carolina's new educational television system, (WUNC-TV) Channel 4.

The first of these program was presented on Sunday, January 16, at 7:30 o'clock, on the topic "What is Pregnancy," with Dr. Charles Flowers as special guest. Dr. S. S. Chipman has arranged the series, scheduled for each Sunday at 7:30 pm.

The entire schedule is listed below:

January 16—What is Pregnancy—Dr. Charles Flowers.

January 23—Diet and Pregnancy—Dr. Robert Ross, and Miss George Smith.

January 30—Anesthesia and Analgesia in Child Birth—Dr. Ross & Staff.

February 6—Bathing and Clothing of the Young Infant—Miss June Watson.

February 13—The First Year of the Child's Life—Dr. Harrie Chamberlin.

February 20—Immunization of the Infant and Young Child—Dr. Edward Curnen.

February 27—The Pre-School Child—Dr. Chipman.

March 6—Sibling Rivalry—Dr. Roger Howell.

March 13—The First Day at School—Dr. Nelson Ordway.

March 20—Adolescence and Some of its Problems—Dr. Roger Howell.

March 27—Home Accident Prevention—Dr. Charles Cameron.

April 3—The Promotion of Dental Health in Children—Dr. William Demeritt.

RESEARCH CONFERENCES

The schedule for the School of Medicine Research Conferences through the remainder of this session is listed here. These conferences are to be held in Room 304 of the School of Medicine Building, at 7:30 in the evening on the dates indicated.

24 February 1955 Thursday

Dr. George D. Penick—Responses of the coagulation Mechanism to Focal Necrosis of Body Tissues

Dr. W. R. Straughn—Studies of Mechanisms of Action of Antihistamine Compounds

Dr. C. W. Hooker—Virilism in Mice

24 March 1955 Thursday

Dr. John H. Schwab—Studies on Hemopysins of Group A Streptococci

Dr. Robert H. Wagner—Antiaccelerator Activity of Canine Plasma

Dr. J. E. Wilson—Amino Acid Metabolism

28 April 1955 Thursday

Dr. Colin G. Thomas—Use of Radiogold in Studying Lymphatic Dissemination of Cancer

Dr. Thomas C. Butler—Topic to be announced

Dr. W. E. Dossel—Genesis of Parathyroid

26 May 1955 Thursday

Dr. Ira Fowler—Development of Vertebral Column

Dr. M. K. Berkut—Calcification

POSTGRADUATE COURSES

Dr. W. P. Richardson, Assistant Dean for Continuation Education announced the following corrected schedule for postgraduate medical courses in 1955:

Statesville—February 22, March 1, 15, 22, 29, April 5

Albemarle—February 23, March 2, 16, 23, 30, April 6

Shelby—April 6, 20, 27, May 11, 18, 25

Chapel Hill—Third Annual Postgraduate Course in General Medicine and Surgery—March 8, 9, 10

Chapel Hill—Postgraduate Course in Diagnostic Methods and Aids February 16, February 23, March 2, 9, 16, 23, 30, April 6

CERTIFICATES TO GRADUATES

To date more than 300 alumni, 1940 and earlier, have requested the special Certificate in Medicine made available through the Office of the Dean. The first order has been completed and mailed. The second order of 140 will be mailed in ten days.

It is not too late for alumni who wish such a certificate to order one. You will recall that after 1941 a Certificate in Medicine was given to those completing two years of medicine at Chapel Hill before going on to some other institution for the M.D. degree.

Those who finished their work prior to 1941 received no such certificate. Many of them felt this lack, and it was for them this plan was devised. Upon request to Dean Berryhill (attach your check for \$5, the exact cost of production) such a certificate with proper signatures, dates, et cetera, will be tailored for you, and sent to you just as soon as it comes from the engravers. If you have not ordered your certificate and wish one, write Dean Berryhill about it.

HEALTH SEMINAR HELD

Leaders in the Seminar on Industrial Health held January 13 and 14 at the North Carolina Memorial Hospital, co-sponsored by the School of Medicine, Occupational Health Committee of the North Carolina Medical Society and Liberty Mutual Insurance Company, reported that they were delighted with the attendance and interest in these meetings. About 75 representatives of the medical profession and industry attended these sessions.

The Office of Continuation Education is planning to make copies of the proceedings available to persons interested in receiving them at cost of reproduction. Those interested in obtaining a copy should notify the Office of Continuation Education of the School of Medicine.

SUPPORT OF MEDICAL FOUNDATION

More than 500 alumni and friends made individual contributions to the Medical Foundation, and specifically the Medical Alumni Fund of the Foundation during 1954.

A certificate of appreciation has been sent to each donor. The annual report and list of donors will be published and distributed within the next two weeks.

The Medical Foundation increasingly fills an important place in the support of the School of Medicine. It is a support that every alumnus will find pride in sharing. Make your gift to the Medical Foundation one testimony of your gratitude for what this school has meant to you, and for what this School is now doing for medical education, and for the health of all of the people of the State.

Editorial

Television And The School Of Medicine

Television is being hailed as "the most effective teaching tool ever invented." Certainly it is a powerful medium of mass communication. It may well prove a very important instrument in medical education.

The University of North Carolina began on January 8, the operation of the first educational television station in the nation, and already has attracted widespread attention from viewers throughout the State.

Sunday, January 16, marked the debut of the School of Medicine in this field of educational television. In a series of thirteen presentations, under the general planning of Dr. S. S. Chipman, these Sunday night programs (7:30 o'clock—Channel 4) will stress the physiology of birth and development and the preventive medicine aspects of child rearing. Interested readings will find a listing of this entire series, with dates, on page 27 of this issue.

Over the long term the School of Medicine aspires to use the potentialities of television for postgraduate medical education—i.e., for an extension of the teaching facilities of the school to physicians in all parts of the State within reach of the TV transmitters. For the present, however, programs are designed for the larger lay audience for whom, it is believed, frank discussions of important medical topics can be of great benefit. There is a strong emphasis in these programs on the practical. They are couched in language and demonstrations that can be easily understood. Thereby is emphasized that it is one of the major aims of these programs to carry information from the University to the people of the State where they are, and where they can use it.

In this work the enthusiastic cooperation of the State Medical Society has been gratefully received. Contributions to the planning and execution of programs by any of its members and by the faculties of Duke and Bowman Gray Schools of Medicine will be welcome.

The School of Medicine is proud to be a participant in this bold experiment designed to improve the health and welfare of the citizens of North Carolina.

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These were the three main objectives when North Carolina launched its Good Health program in 1946. The original state health commission called them "the mutually indispensable legs" of the long-range health improvement plan. "We cannot have enough doctors without more hospitals," said the commission, "nor enough hospitals without greater popular ability to pay for hospital service . . . and such ability to pay on the part of the poorer half of our population is impossible without insurance."

What Has Been Accomplished

MORE DOCTORS

Expansion of the University medical school at Chapel Hill to a full four-year program was the state's answer to the doctor shortage. Of the 241 students now enrolled all but four are from North Carolina. The first class of these home-grown and home-trained doctors was graduated in June, 1954.

MORE HOSPITALS

More than 192 local hospital projects—new hospitals, additions to old hospitals, nursing quarters, health centers, and other health facilities—have been built in all sections of the state. The number of counties without any hospital beds has been reduced from 33 to 15. By 1956 approximately 7200 new hospital beds will have been opened in the Tar Heel State.

AND MORE BLUE CROSS!

Through an accelerated enrollment program in both the urban and rural areas of the state, Hospital Care Association of Durham has been meeting this third great need of the Good Health Plan. Since the program was launched membership in Durham Blue Cross has **MORE THAN DOUBLED!** Over a Quarter - Million people are now covered, and payments to hospitals and doctors exceed \$3½ million a year.



As the Hospital Care Association begins its 22nd year of service, we renew our determination to provide the best possible protection at the lowest practicable cost. To this end we request the continuing cooperation of the State's medical profession.

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April, 1955

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THE BULLETIN

of the School of Medicine
in cooperation with the Whitehead Society
and the Medical Foundation
of the University of North Carolina

Vol. 2

April, 1955

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Medical Education At Chapel Hill

By Warner Wells, M.D.

Dr. Isaac Hall Manning dates the opening of the School of Medicine of the University of North Carolina at Chapel Hill to 1879, and calls attention to a memorandum in the minutes of the University Board of Trustees which met on January 28 of that year:

"The Board being informed that Dr. T. W. Harris has established a Medical School at the University, the Executive Committee is instructed to confer with Dr. Harris and decide whether and upon what terms he shall be made a member of the Faculty without salary."

In due time, Dr. Harris was elected dean and professor of anatomy, and since he received no salary he was not subject to University regulations.

By present standards the beginning of the School of Medicine was, to say the least, inauspicious and the relation of the dean to the university highly irregular, but viewing the situation in its day one can only respect the sincerity and good intent of the founders. The University was desperately poor. During the Civil War it had invested its meager resources in Confederate war bonds and when the post-war convention of 1865 repudiated the State war debt, the University was left penniless. By 1870, the situation was so desperate the University was forced to close its doors. Lefler and Newsome tell of a departing student who wrote on the blackboard: "Today this University busted and went to hell." The University reopened in 1875 under the courageous leadership of President Kemp P. Battle and was still a weak, struggling school four years later when the medical department opened.

The most the faculty could hope to accomplish was, in Dr. Battle's words: ". . . to prepare students for attendance on the lectures of the leading medical colleges." The course of instruction, similar to the preceptorial system generally in vogue, was supplemented with lectures in general and analytical chemistry

Dr. Wells is an Assistant Professor of Surgery in the School of Medicine of the University of North Carolina at Chapel Hill.

by Professor A. Fletcher Redd and lectures in botany and physiology by Professor Frederick W. Simmons.

Lectures were conducted in a first floor room in the south side of Old West. Dissections, when available, were made in a wooden shack which stood in a small grove about where Venable Hall now stands. Clinical teaching was conducted at the bedside or in improvised kitchen surgeries. President Battle says: "Dr. Harris was an able man and a good teacher, but the necessity of engaging in general practice resulted in such frequent absence from his classes that they continued very small. This caused his resignation and removal to Durham in 1885. The School of Medicine was then suspended for five years."

The medical department of the University reopened in September, 1890 under the guidance of Dr. Richard H. Whitehead, a native North Carolinian and Wake Forest graduate, who was then employed as a demonstrator in anatomy at the University of Virginia. A nine-months course of instruction was offered in what the catalogue listed as a "Preparatory School of Medicine." Dr. Whitehead taught anatomy, physiology, and materia medica; Dr. F. P. Venable: chemistry; Dr. J. A. Holmes: botany; and Dr. I. W. Gore: physics. Dr. Charles S. Mangum joined the staff in 1891 as professor of physiology and materia medica and Dr. H. V. P. Wilson became professor of biology, replacing Dr. Holmes.

Between 1890 and 1895 the school expanded from ten to twenty-five students and as its diplomates transferred to Maryland, the Medical College of Virginia, University of Virginia, Jefferson, Pennsylvania, Long Island, South Carolina, and Vanderbilt, it was well received and its students created a favorable impression.

By 1900 the one-year course was expanded to two years, definite entrance standards were required, and the school joined the Association of American Medical Colleges. These moves were in keeping with the general trend, modelled after the German universities, to make medical education an integral part of the universities.

Before 1900 two legislative acts were passed which influenced the school's medical curriculum. Both were enacted in 1897.

The State Board of Medical Examiners discarded the diploma as a prerequisite to licence in favor of the satisfactory completion of an examination. One man won a prize in anatomy which carried with it an internship in a prominent hospital although he held no diploma and had attended no course of clinical instruc-

tion. Through the efforts of faculty members the act was rescinded.

Before 1900, the preclinical course centered on anatomy, and the effectiveness of anatomical demonstration decidedly influenced the quality and tone of medical teaching. Dr. Whitehead was a stimulating teacher and a skillful dissector, although he rarely had at his disposal more than one cadaver. When this was the case he dissected one half of the body while the students looked on. Later, they dissected the other half. Bodies were generally procured by grave robbing, but this practice Dr. Whitehead vigorously opposed and, once, when a body was "resurrected," he became highly incensed and ordered it reburied. The only cadavers he used were purchased by open contract, and letters are still on file relating to some of his transactions.

Even so, the supply was never adequate and at times a dearth threatened the school. The passage of an Anatomy Act in 1897, permitting the legal procurement of unclaimed bodies, augmented the cadaver supply and led to improvement in clinical teaching. Its repeal in 1899 made matters worse than they were before the Act, and the deficiency was felt until a legislative repeal in 1903.

A contribution to teaching and research was added in 1902 when Dr. Isaac Hall Manning, who joined the University as professor of physiology in 1901, was allowed \$500.00 by Dr. Whitehead to purchase equipment to teach a laboratory course in physiology and bacteriology. Dr. Manning taught the courses and for the first time in the history of the medical school "brought into use much of the apparatus used in experimental physiology and initiated the student in the methods of experimenting with living tissues."

The School of Medicine was then in New East, where it had moved in 1896-97, with the physiology laboratory and a lecture room on the second floor. Histology was taught in Dr. Wilson's laboratory, anatomy in the wooden shack previously mentioned, and pathology and bacteriology in rooms on the fourth floor of New East.

Dr. Whitehead taught bacteriology until Dr. Manning was given the job. An account of Dr. Whitehead's teaching methods has been written by Dr. Manning, and is worth recording: "Dr. Whitehead returned to Chapel Hill about a week before the school opened in September, when the weather was still very hot, would go up to his laboratory on the east side of the fourth floor of the New East Building, build a fire in the large coal stove, strip to

the waist, and prepare enough culture media, distributed in test-tubes, 3 x 1/2 inch, to last throughout the course. As the course proceeded the tubes were inoculated and the cultures passed around the class for observation. Usually the peculiarities were demonstrated by Dr. Whitehead. Smears were made from them and examined under the microscope, likewise usually demonstrated. Not a bad way to teach bacteriology."

The value of an expanded curriculum and course of study leading to a medical degree was frequently pressed by medical faculty members and became reality when a clinical department opened in Raleigh in 1902. Dr. Hubert Ashley Royster, the first doctor in North Carolina to limit his practice to surgery, an accomplished surgeon, teacher, and investigator, a founding member of the American College of Surgeons and Southern Surgical Association, became dean and succeeded Dr. Augustus Washington Knox as professor of surgery in the clinical school. Dr. Royster's operative clinics were attended by students and practitioners in North Carolina and adjacent states, as well as by surgeons from other clinics: Dr. Rudolph Matas of New Orleans, John B. Deaver of Philadelphia, Dr. Charles Mayo of Rochester, Minnesota, and others. A three-story building on the north side of the first block of West Hargett Street served for lecture and class rooms. A photographer skilled in tinting pictures of anatomical and surgeons' specimens was regularly employed.

The Medical School in Chapel Hill was assigned to what is now Person Hall in 1905. The north side of the middle section was made into two classrooms for microscopic work. On the west side laboratories were created for physiology and pharmacology. A large room fronting to the east was used for lectures, and two small rooms to its rear were reserved for the dean and the library. At this time the library appropriation was \$15.00 a year, so few books or journals could be purchased. In time, the bequest of books from the libraries of Dr. Thomas F. Wood of Wilmington, Dr. Thomas and Dr. Hines of Raleigh, and Dr. Bahnson of Winston-Salem improved the library and stimulated later gifts.

Dr. Whitehead resigned in 1905 to accept the deanship at Virginia; Dr. Isaac Hall Manning became Dean in Chapel Hill; Dr. William deB. MacNider, a graduate of the school in Raleigh and surgical assistant to Dr. Royster, was appointed Professor of Pharmacology; and Dr. Charles Staples Mangum became Professor of Anatomy. The enrollment during the academic year

1905-06 was 73 in Chapel Hill and 33 in Raleigh, a total of 106 students.

Dr. David H. Dolley, a Hopkins graduate and student of Dr. George W. Crile, was elected to the chair of Pathology in 1906. He effectively indicated the need for experimental animals, breeding pens, and a strong department library. During this same year the University accepted a proposal of the American Medical Association to increase its entrance requirements to one year of college with courses in biology, chemistry, physics, and a modern language. This increase in standards was recommended to become operative in 1910, but was unanimously approved for the following academic year.

The old dissecting room shack burned in 1907 and was replaced by a larger frame building one hundred yards to the east. The medical school continued to grow. Five hundred and two students were reported enrolled in 1907. The four year school was given an "A" rating by an American Medical Association conference at St. Louis in 1910.

The clinical department of the University of North Carolina School of Medicine was active until 1910. There are conflicting reports concerning the reason for its closure, because close it did, following an investigation of medical schools by Dr. Abraham Flexner under the aegis of the Carnegie Foundation; published as "Bulletin Number Four" in 1910. Dr. Flexner, a school teacher and graduate of Johns Hopkins University, was aware of trends in medical education, deriving most of his knowledge and his yardstick of measurement from the Johns Hopkins Medical School, which opened in Baltimore in 1893.

Dr. Flexner was looking for standardization at the highest present-day levels: an academic degree from a reputable college or university plus four years of medical education in a medical school closely associated with a university offering two years of pre-clinical education on an experimental and observational basis and two years of bedside and clinic training under specialists in the then known medical specialties.

Dr. Flexner makes this comment in his autobiography: "The State University of North Carolina gave the first two years of its medical course at Chapel Hill, while the two clinical years were given at Raleigh. The medical school building at Raleigh was filthy and absolutely without equipment. I employed a photographer who took photographs of every room in the building. When I returned to New York, Dr. Pritchett (President of the Carnegie

Foundation for the Advancement of Teaching, 1906-1930) sent these photographs to the president of the University with a letter saying that they would be reproduced in facsimile in the forthcoming report. The President, who had probably never visited the Medical School, was horrified. After a hurried visit to Dr. Pritchett, he called the regents together, and the clinical years were abolished, so that it became unnecessary to mention them in the bulletin that was subsequently printed."

Dr. Manning makes the following comment: "The report of Dr. Abram Flexner on the individual schools is not available, but the information coming to the President of the University, Dr. Venable, was that it was unduly severe and unfair to both the department at Chapel Hill and particularly so to the department at Raleigh. The criticism of the department at Raleigh was evidently concurred in by the Council, and the President was informed that unless the department at Raleigh was closed, approval of the departments at both Raleigh and Chapel Hill would be withdrawn. As a matter of fact the appropriations received by the University from the State at this time were so ridiculously small that none could be diverted from Chapel Hill without seriously impairing its work. The Raleigh department was closed, the last class to graduate being in 1910. The department is not included in the list of schools of North Carolina in the Carnegie report, and nothing is said of it . . ."

Continuing, Dr. Manning says: ". . . While no one will have the temerity to defend a poor medical school or a poor doctor there may be some difference of opinion in determining what a poor medical school is. The mere question of money and highly paid teachers do not *a priori* mean a good medical school. These highly paid teachers are often so concerned with their private work, research or private practice, that their teaching is wholly perfunctory and the cat doesn't really get anything out of looking at the king, neither does a medical student get anything out of just looking at a great doctor . . ."

"Out of the original 155 (medical schools), only 77 survived. Some of them were saved by mergers, others by being taken over by colleges or universities and others by the generosity of some philanthropist. The establishment of the University Medical School was encouraged, not only the assumption of financial responsibility, but the location of the School on the University campus."

A justifiable effort to measure up to the newer concepts of

medical education failed, not because of its instigators, the teachers, or the students who graduated from the School in Raleigh. Many of those graduates have had distinguished medical careers. The failure may have been due to inertia, lethargy, and an unwillingness to lend financial support when other causes seemed more urgent and political pressures more insistent.

Caldwell Hall was constructed in 1911 at a cost of \$50,000.00. The interior was arranged to meet the requirements of the School of Medicine, although the animals could not be housed in the attic as originally intended. Their quartering in the basement prompted Dr. Mangum to remark one day, as he dismissed his class from a lecture room over the kennels: "I can't compete with a dog fight." In general, though, the School of Medicine was much better situated in Caldwell Hall than it had been in Person Hall.

The next 12 years passed with significant advancement in teaching and research as evidenced by the academic standing of the students who transferred at the end of their second year, and the scholarly reputations made by members of the faculty. A determined effort was made to attain legislative support for an expansion to a creditable four-year school, but factional and personal differences among the faculty, trustees, and state legislators plus interference from other sources led to its ultimate defeat in 1923. A headline in the Raleigh News and Observer, dated 27 February, 1923, read: "Request of the University of North Carolina for \$350,000 as a start on the establishment of a four-year medical college was disallowed."

In the meantime Trinity College in Durham expanded into Duke University and opened a four-year medical school in 1930, and Wake Forest College sponsored the opening of the Bowman Gray School of Medicine in 1941.

Dr. Charles Staples Mangum became Dean in 1933 and during his tenure plans matured for the construction of a commodious building on the Pittsboro Road to house the School of Medicine and an expanding School of Public Health. Dr. Mangum died before the new building was completed, and it remained for Dr. William deB. MacNider to see its completion and occupancy after he became Dean in 1937.

Dr. W. R. Berryhill succeeded Dr. MacNider as Dean in 1941, and saw the expansion of the two year school into an accredited four year medical school. An alumnus of the University and the School of Medicine at Chapel Hill, and a student of Drs.

Manning, Mangum, and MacNider, Dr. Berryhill represents in a sense the second generation in descent from Richard Whitehead in this School. The period 1941-1955 has coincided fortunately with increased prosperity of the state and nation and with a growing demand from all sources for better medical service for the public. Because of increased state appropriations, it was possible in the early years of this period to strengthen greatly the six basic science departments and to improve and enlarge the library resources under the direction of Dr. W. C. George. In addition, through affiliations with the Watts Hospital in Durham, the Rex Hospital in Raleigh and the Durham County Tuberculosis Sanatorium, more adequate clinical facilities were made available for the introductory clinical work in the sophomore class.

With a view to planning for the future medical and health needs of the state, the late then Governor, J. M. Broughton, in 1944 appointed a commission on Hospitals and Medical Care to study the needs of the state and to make recommendations to the General Assembly of 1945. The work of this Commission and that of various committees that followed is too well known and too recent to be detailed here. In brief, under the able chairmanship of Clarence Poe, the Broughton Commission recommended "more hospitals, more doctors, and more insurance" to meet the medical needs of a growing state. Beginning in 1945, successive General Assemblies in 1947, 1949, 1951, and 1953, have appropriated funds in large amounts for hospital construction, for the State Board of Health, for the mental and tuberculosis hospitals and for medical, dental, and nursing education at the University of North Carolina.

The interest, the stimulus, and the leadership which has made this program possible has been provided by literally thousands of people throughout North Carolina—the Good Health Association, and men and women in all professions, occupations and walks of life. The state professional societies have been active and helpful.

As a result the two-year Medical School, as a part of a program for improving medical and health facilities for the entire Commonwealth, secured ample clinical facilities with the opening of the North Carolina Memorial Hospital in September, 1952, the Gravelly Sanatorium in 1953, and a psychiatric wing in 1955.

Thus, in 1954 exactly 75 years after Dr. T. W. Harris began medical instruction at the University, the first class graduated

from the complete Medical School on the University campus.

Over the years the University School of Medicine has been the largest single source of supply of doctors for the state. It has trained in excess of 2000 physicians, of whom 1578 are living. At present there are approximately 700 of its graduates practicing in 86 counties in North Carolina. In a six-year period, the 344 students admitted from 76 counties in North Carolina, 124 or 37 per cent have come from communities of under 2,500 population; and of these, 56 or 17 per cent were from farms.

The greatest need at present is for more doctors in general medicine particularly in smaller towns and communities. The School and the Memorial Hospital provide a type of intern and resident training program designed to give the best background for general practice. It is anticipated that a part of this training will be spent in smaller community hospitals which wish to affiliate with the University for this educational program. Postgraduate or refresher courses for practicing physicians, sponsored by the University Medical School and the Extension Division, are being continued at centers in the State and at the Hospital at Chapel Hill. Arrangements can be made by physicians to stay for varying periods of time at the Hospital for refresher work.

In anticipation of the expansion of the School and the enlargement of the laboratories and classrooms of the medical building, the size of the entering class has already been increased from 50 to 66, and when all facilities are complete and in operation, the number will be increased ultimately to 75. The medical faculty are responsible for the instruction of dental, pharmacy, and nursing students in the basic science courses. In addition many graduate and undergraduate students including medical technicians in the University take courses in the departments of the Medical School. For the current year, including all the above plus the interns and residents, whose training is a direct responsibility of the medical faculty, and the practicing physicians in the state who have enrolled in the extramural and intramural postgraduate courses, the Medical School has given instruction to more than 750 students.

The School has an unusually able faculty, carefully selected for their competence in their own particular fields, and for their contributions already made and promise for the future. They are interested in the medical needs of this state and in the services this School can render to the people of North Carolina.

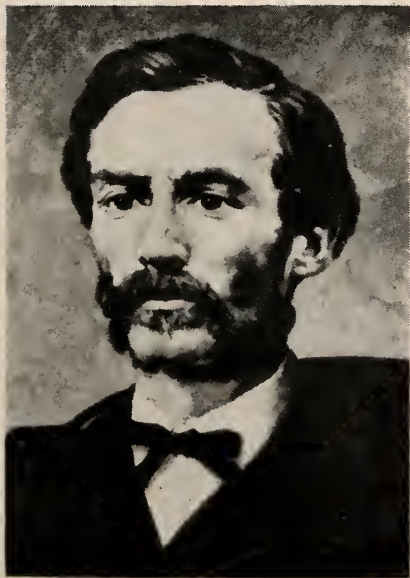
These Men Have Guided The School

1879-1885:

THOMAS WEST HARRIS, M.D.

By Harold Patterson, M.D.

"On February 12, 1879, the Medical School of the University of North Carolina was established by the Executive Committee. Dr. Thomas W. Harris was elected Professor of Anatomy and Dean of the School." These simple sentences are found in Dr. Kemp Battle's "History of the University of North Carolina."



Dr. Harris

Thus is recorded the return of Dr. Harris to his Alma Mater, as a member of its faculty, 20 years after his graduation. A native of Chatham County, Thomas West Harris was one of four "first honor men" among 89 graduates at commencement in 1859. He probably ranked second in the class, for it is further recorded that the first student orator was William Bingham Lynch (who spoke in Latin!), followed by young Harris, with "The Hamiltonian System."

At the beginning of the War Between the States, Thomas Harris enlisted as a private in Pittsboro's "Chatham Rifles" Company. Eighteen months later, as a Captain in the Confederate Cavalry, he reached Lee's Army at Spottsylvania Court House during the Battle of the Wilderness. A month later, at Cold

Dr. Patterson practices general surgery in New York City (1160 Park Avenue). He is attending surgeon at Roosevelt Hospital, and Consultant in Surgery, the Southampton Hospital.

Harbor, Captain Harris was wounded; but he was able to continue in active service until he was severely wounded near Ashland, Virginia.

After the close of the war, he decided to study medicine and went to Paris for this, attracted by Pasteur's recent announcements. He studied under Velpeau at "L'hôpital de la Charité," receiving his "certificate" after a year—in accordance with the usual custom of the time—and then returned to New York to receive a degree as "Doctor of Medicine" in 1868, from the "Universitatis Urbis Neo Eboraci," the ancestor of today's New York University Medical School.

Dr. Harris returned to his home State and practiced for a time in the Eastern part of the State, moving in the fall of 1877 to Chapel Hill where he continued his practice. His desire to teach was such that, under discouraging circumstances and without salary, he established a Medical School in the struggling University that had been reopened only three and one half years earlier, after the lamented post-war hiatus in its life.

The School was a simple affair. Dr. Harris was Professor of Anatomy and Dean. Professor A. Fletcher Redd had charge of General and Analytical Chemistry, and Frederick W. Simonds was Professor of Botany and Physiology. Anatomy was continued in the second year by Dr. Harris, who also taught *Materia Medica*, Therapeutics, and the Practice of Medicine, as well as Surgery. He used a collection of anatomical models made by the celebrated Auzoux, and also taught by the dissection of human subjects. This led to tales of "grave robbing," as was the case in the neighborhood of all the pioneer Medical Schools of that day. Fact and fiction can not be separated in the recorded controversies of the time, but interesting anecdotes survive—no doubt a mixture of the two.

The aims of the School were modest—to prepare students for later attendance on the lectures of the "leading Medical Colleges." Dr. Battle, who knew Dr. Harris so well, described him as "an able man and a good teacher," "active and industrious," and as having "a decided genius for his science."

Unfortunately, the economic needs of a wife and five children, and the difficulty of "making ends meet" in the small village, led Dr. Harris to resign in 1885 and to move to Durham to practice. He died, shortly before his forty-ninth birthday, on November 19, 1888.

1890-1905:

RICHARD HENRY WHITEHEAD, M.D.

By Archibald Henderson

It is a remarkable fact that my native town, Salisbury, North Carolina, furnished the state of North Carolina three of its most eminent physicians for a century. Dr. Marcellus Whitehead, a native Virginian, settled in Salisbury in 1845 and there established a magistral position as general practitioner, surgeon, obstetrician, gynecologist, pediatrician, aurist, and oculist. His oldest son, John, for many years our family physician, was not only an extraordinarily gifted physician, equally adept in diagnosis and prognosis, but also a successful business man, and the most beloved man in Salisbury largely because of his exquisite courtesy, deeply sympathetic nature, and an ideal "bedside manner." His second son, Richard Henry Whitehead, was an indefatigable student of medicine and of languages, a precocious mind of early maturation, and a most competent organizer. He became Dean of the Medical School at the University of North Carolina, in 1890, when the School was reopened after its six years (1879-1885) under Dr. T. W. Harris. After fifteen years he became Dean of the Medical School of the University of Virginia, being called to that position by another famous North Carolinian, Edwin Anderson Alderman, then president of the University of Virginia.

Dr. Whitehead was born in Salisbury, North Carolina, July 27, 1865, a few months after Jefferson Davis and leading members of his cabinet passed through to the southward on their "flight into oblivion." Although eleven years his junior, I knew him well during his fifteen years sojourn in Chapel Hill. Dr. Whitehead's wife, Virgilia Whitehead, his second cousin, was a gifted pianist, and almost every Friday night in their gracious home formerly occupied by Mrs. Cornelia Phillip Spencer, she accompanied Dr. William Cain, an accomplished violinist, in elaborate programs of classical music.

Dr. Whitehead, a Baptist, took his academic degree at Wake Forest College; and achieved the spectacular triumph of passing through the two-year medical course at the University of Virginia in one year. After serving there as demonstrator of anatomy,

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taking post graduate courses in the University of Pennsylvania and in the New York Post Graduate School, and working in hospitals in Philadelphia and New York, he returned to Salisbury to enter into partnership with his brother, John, in the practice of medicine. During that summer, 1890, he received and accepted the call to the University of North Carolina to become Dean of the revived medical school and professor of pathology. The task was truly herculean; for without funds, buildings, hospital facilities, or assistance in the teaching of anatomy, physiology, and materia medica, he faced the labor of organizing a medical school from scratch. Furthermore, it fell to his lot to serve not only as university physician, but to minister to the community and people of the surrounding country as general practitioner. It was fortunate that he was passionately fond of surgery for his interest in general medicine was inconsiderable. Once he had pin-pointed the complaint and anticipated its development, he took little or no interest in the patient's further progress unless there was a turn for the worse. He was impersonal, withdrawn, coldly scientific; and regarded his patient almost exclusively as a subject of scientific interest. In this respect, he was the exact opposite of his brother, John. I have heard the late Dr. Charles S. Mangum say that Dr. Whitehead was the most remarkable diagnostician he had ever seen: "He would take the patient's temperature, listen to his heart-beat, examine his eyes and eyelids, walk about the room, sniff a time or two, and then bark: meningitis, typhoid, pneumonia, or what not." After prescription and therapy were established, Dr. Whitehead lost interest in the case unless or until his attention to it was specifically recalled. He lacked the Job-like patience of Dr. Mangum who for years visited an old lady in the country who periodically called him for treatment of a non-existent ailment. On asking her each time as to the nature of her ailment, she invariably replied in a querulous tone: "I don't know why it is, Doctor, but somehow or other everything I eat seems to go to my stummick."

Dr. Whitehead would probably have won wide fame as a surgeon had he devoted himself to surgery, for he was primarily an anatomist. I recall the high praise given his book, "The Anatomy of the Brain," by Venable, MacNider and Mangum; it filled a long-felt want; and was widely used as a textbook. I read the copy Dr. Whitehead presented to my uncle; and was fascinated, not to say horrified, to discover the intricacies and complexities of that great directive organ of human activity. I often noticed

that in conversation and even while listening to music, Dr. Whitehead was what the French call *distract*: his mind was far away, ruminating over some obstruse scientific problem. On any scientific matter he worked with utmost thoroughness and deliberation; and was often engaged for years upon a single problem until it was solved to his entire satisfaction. The inevitable result was that his scientific contributions fell far short in both quantity and range of those of his unusually prolific scientific colleagues: Cain, Wilson, and Venable. His most significant contributions to knowledge were the series of papers on the histology of the interstitial cells of Leydig and his study of the embryology of the sternum. No great scientific honors fell to his lot; but not a few tempting offers of high position came his way, only to be declined. He was certainly one of the greatest teachers of anatomy this country has ever produced.

1902-1910 (Raleigh):

HUBERT ASHLEY ROYSTER, M.D.

By Roy B. McKnight, M.D.

You ask me, what is minor surgery? That's easy! Minor surgery is any surgery done by a minor man."

"Once appendicitis, always appendicitis until the little devil is amputated!"

One might say that this is not the place for Royster aphorisms. I disagree; for any write-up of him regardless of its length, would hardly portray the man without mentioning a few of the many.

It was in 1902 when the University of North Carolina Trustees approved the establishment of a graduating school of medicine in Raleigh offering the years of clinical instruction supplementing the basic science work offered at Chapel Hill.

A young surgeon, then only 30 years of age, was appointed as dean. No funds were appropriated. The trustees merely said that we will have a School of Medicine in Raleigh and Dr. Hubert A. Royster will run it! It was a challenge the young Doctor readily accepted—the type of challenge he has always accepted, requiring moral courage, fortitude and thought.

Dr. McKnight practices surgery in Charlotte, and has recently served as president of the Medical Alumni Association of the School of Medicine of the University of North Carolina at Chapel Hill.

No money, no building, no equipment, no faculty; only students' fees, and but six students registered! How much of his own resources he put into this will never be known for Hubert Royster would be the last to mention it. Incidentally, the first to register was the late Dr. "Billie" MacNider, beloved by his many students and a host of friends. Dr. Royster selected a faculty of five devoted men and the largest group of teachers he ever had was only sixteen.

In June, 1910, when the last class of fourteen doctors was graduated, the school had to close. Only the ingenuity of its dean and the fervor of its small faculty had kept it going. During these years seventy-six men earned their medical degrees from the University. It has been my privilege to know a number of these physicians. They were good, well trained, skilled medical men and leaders in their communities. Some attained national and international fame, and to emphasize this I need only to mention Dr. Wm. deB. MacNider and Dr. John A. Ferrell. Such was the caliber



Dr. Royster

of men turned out as physicians by Dr. Royster and his small band of earnest and able teachers.

The years have passed. There has dawned on the horizon the brilliant glow of a carefully conceived plan—stupendous in its inception—the great Good Health Movement of the State of North Carolina, a program being watched and studied by virtually every state in the Union—a program already beginning to bear fruit. The heart of this movement is in the great School of Medicine at Chapel Hill, with its majestic physical plant staffed by an eminent, imposing and investigative fac-

ulty, who understand the students' needs and cooperate wholeheartedly with them.

Nearly three hundred carefully selected young men are preparing to take their place professionally in the service of the people of the State. Behind this is the financial backing of the

State of North Carolina. What a contrast to the little school of over fifty years ago in Raleigh. As the hearts of many of us thrill over what is taking place at our great University today, let us never forget the hard work, the devotion, the splendid teaching and the abiding interest exemplified by Dr. Royster and his little group who turned out some of the best doctors North Carolina ever had. There are twenty-five of those distinguished graduates living, and many of them still active today. Through the years the graduates of this Raleigh group have headed great world-wide medical movements, advancing programs of state health and hospitalization, and served their local communities as general practitioners and specialists to the never-ending credit of their Alma Mater.

I have no intention of outlining here the many honors that have been conferred upon Dr. Royster by his colleagues in medicine, institutions of higher education and the public, but I am very much interested in the reasons for these honors. He was a master surgeon, an efficient dean, a keen student of English and those things cultural, an athlete of note, a brilliant writer, a man devoted to his profession who always kept abreast of the latest and best in surgery. He was a pioneer in surgery in North Carolina, but did not retire as a pioneer. He loved people, places and things. What is most important of all he was and is a *good man*. What more is there to say! He has long since outlived his three score years and ten and is still hale and hearty in his golden years. Some day he, like all of us, will reach the Western Horizon of Life. We hope that day is many years off, for we still need his gentle and wise counsel and friendly advice.

So, thanks and greetings Dean Royster: surgeon, teacher, students' friend. May a good and generous God give you many more happy years, and accept, please, this expression of our esteem:

Integer vitae scelerisque purus
Non eget Mauris iaculis neque arctu
Nec venenates grvida sagittis
Fusce, pharetra,
Sive per syrtis iter aestuosas
Sive facturus per inhospitalem
Caucasum vel quae loca fabulosus
Lambit Hydaspes.

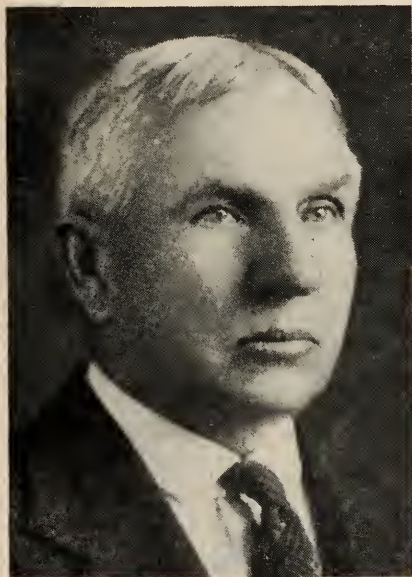
1905-1933:

ISAAC HALL MANNING, M.D.

By W. Raney Stanford, M.D.

Isaac Hall Manning was born in Pittsboro, North Carolina, September 14, 1866, the son of John Manning, the first professor of law at the University of North Carolina.

He was a student in the University from 1882 to 1886 and again, as a medical student, from 1894 to 1895. Transferring to Long Island College, he received his Doctor of Medicine degree there in 1897. He was Professor of Physiology at the University of North Carolina from 1901 to 1939, and was Dean of the Medical School from 1905 to 1933.



Dr. Manning

Dr. Manning was married in 1906 to Martha Battle Lewis, who died the following year. In 1911 he married Mary Best Jones, who with three sons, survives him.

He was president of the North Carolina Medical Society in 1933-1934. The last years of his life were spent mainly in organizing and directing the Hospital Saving Association, the first hospital insurance plan sponsored by a State Medical Society.

Not all men can be great. It is a goal that all men would like to attain, yet few reach it. Isaac Manning was one of the few.

He was modest, gentle, courteous, and above all, a great thinker; with that greatest of all senses—common sense, the one that teaches us how to use the other five. Not only did he have knowledge, but the wisdom required to use it. His life from beginning to end was one continual exposition of constructive thought and action.

Dr. Stanford practices general medicine in Durham, and serves as Clinical Associate Professor of Medicine in the School of Medicine of the University of North Carolina at Chapel Hill.

He was interested in the North Carolina Medical Care Plan. For years, he had dreamed of a four-year medical school. There were, however, two things that kept him from seeing this fulfilled in his life time. One of these was that he insisted that it be built at Chapel Hill; the other was that it be a quality institution.

When he first heard the outline of the present North Carolina Medical Plan, he immediately said that the community hospitals were the most important part of the plan. He realized even then that financing the unit at Chapel Hill would be one of the most serious problems the plan had to face.

Only a few of his many rare gifts can be mentioned here. He loved his students: all "his boys" knew him as their friend. He loved the University of North Carolina, never allowing any private interest or feeling to interfere with its progress. He loved people, and believed that medical care should be available to every living human being. The high cost of this care distressed him, and that was the reason he became so interested in hospital insurance.

Dr. Manning was one of the most advanced medical thinkers of our time, possessing that rare faculty of seeing what should be done, and then doing it. He knew that in spite of all the dozen ways that something could not be done, there was usually one way it could be done. He was a man capable of concepts. What other men groped for, he saw. His concepts were based on the past, but conceived for the future. For this we are grateful.

1934-1937:

CHARLES STAPLES MANGUM, M.D.

By T. F. Hickerson

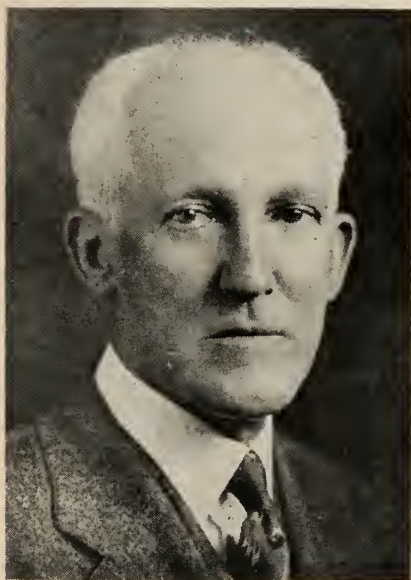
My intimate acquaintance with Dr. Mangum began in 1905 when, as a student and part time instructor in the University, I lived and felt at home in the old Mangum residence. The only members of the family living in the home at the time were his mother, Laura Overman Mangum—a lovely character—and his sister, "Miss Ettie." His father, Professor Adolphus W. Mangum, had died several years earlier.

Dr. and Mrs. Mangum and son, Charles, Jr., were frequently in his mother's home. Dr. Mangum immediately won my admira-

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tion by his kindness, friendliness, vitality, erect, brisk carriage, and good sportsmanship. Previously I had enjoyed hearing him sing in the quartet composed of Mangum, Ehringhaus, Woollen, and Galloway. He brought more cheer than any physician I ever knew. His popularity was easily understood. Miss Ettie told an amusing story about one of his patients, a country boy who literally had turned yellow in the face. Dr. Mangum was truly baffled and worried. After several examinations, he said to the boy, "Tell me, have you been *swallowing* that tobacco juice?" The naive reply was, "Yes sir."

At the presentation of his portrait to the University in the Medical School Library, year 1945, his colleague, Dr. W. C. George, paid him this tribute: "As a teacher of medical students, Dr. Mangum had the capacity of transmitting his own enthusiasm



Dr. Mangum

and interest to his students. He somehow managed to make bones and joints and muscles and nerves matters of compelling interest. Not only did he teach his students anatomy; quite unconsciously, both to him and his students, something of the man and his outlook on life was absorbed by the students.

"The University and this medical school owe a debt of gratitude to Dr. Mangum for many things: for his fine personality, for decades of splendid teaching, for service on numerous committees having to do with the interests of students and faculty, for a few

years' service as dean. During his deanship the School of Public Health was established, largely through his efforts; and he promoted this building (the School of Medicine Building) which he did much to get but never was in."

After declining health forced him to give up the deanship, his chief pleasures, aside from a happy home life, were walks and play with his handsome dog "Nancy" and the beauty of Mrs.

Mangum's garden which inspired W. C. Coker to write:
 Every flower and fern that bends
 Around her feet its beauty sends
 Into her heart, into her face,
 And lends its fragrance to her grace.

Dr. Mangum also was poetically inclined. During the last year of his life, he wrote:

MY GARDEN

My home could not be all it is to me
 Without its garden and the one who reigns—
 Its guardian spirit, sweet and fair to see—
 Who with her love its myriad life sustains.

Roses, lilies, lilacs, columbine,
 With poppies red and ragged-robins blue,
 About the heart a fragrant wreath entwine
 To hold my willing homage ever true.

The ever changing colors of the flowers,
 A mocking bird at dawn, a thrush at eve,
 Red cardinals nesting in the shady bowers—
 The simple joy of living they achieve.

I sit beside its borders when the day
 Sinks in the west, and slanting sunbeams cling
 To leaf and flower, as loath to go away
 And know the peace that only love can bring.

I pray that when life's autumn hovers near
 I may, like this fair garden, gently yield
 To meet the rigors of the dying year—
 Content to smile until life's springs are sealed.

1937-1940:

WILLIAM de BERNIERE MacNIDER, M.D.

by J. G. de Roulbac Hamilton

William deBerniere MacNider was born in Chapel Hill, June 25, 1881, with a few brief absences lived there all his life, and

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became an unforgettable figure in the life of the University and the community. He died May 31, 1951, and is buried there.

He deeply loved the place, the flowers and trees, the woods, fields, and hills of the surrounding country over which he ranged as a boy. All played a part in the making of the man. He loved its folks too. From boyhood he had a wide acquaintance with the people of the larger community, and presently he knew almost everybody. They knew him and mutually they held each other in high regard.

The son and grandson of physicians, his mind naturally turned to a medical career. He was influenced, too, in that direction, by Dr. Richard Henry Whitehead, who was his fast friend. Entering the University in 1898, he was fortunate in studying under Dr. Henry Van Peters Wilson, whose rigid standards



Dr. MacNider

of study and research made an indelible impression upon his habits of work and thought. He transferred to the University Medical Department in Raleigh, where he received his M.D. degree in 1903.

He later studied at the University of Chicago and Western Reserve University. He was instructor in clinical diagnosis for two years and in 1905 became professor of Pharmacology in Chapel Hill. He was one of the five original Kenan professors in 1918, was dean of the School of Medicine from 1937 to 1940, and retired in 1950.

From the beginning he enjoyed a reputation as a teacher and in research. His activity and standing in the latter field can be judged by his publications and by his place in professional organizations. With membership in a widely diversified range of the latter, he was president of the American Society of Pharmacology and Experimental Therapeutics, the Society of Experimental Biology and Medicine, the International Anaesthesia Research Society, the Gerontological Society, and was chairman of the American Division of the Inter-

national Club for Research in Aging, and of the section of the American Medical Association on Pharmacology and Therapeutics. He was also a member of the American Academy of Arts and Sciences, and the American Philosophical Society.

As a teacher he was notable not only for the soundness of his teaching and the efficiency of his methods, but also for his personal relations with his students. His requirements were rigid and they were respected, but he came quickly to know all of his students, and to a remarkable degree to be aware of them individually, establishing with each a personal relationship. It became an inspiration to the teacher, and was of incalculable benefit to the student.

Intensely human, his interests were wide. He loved nature with utter devotion. Possessed of a genius for friendship, he gave his to uncounted numbers. Perhaps, it is a fact that with all else for which he is remembered, that stands first. Even those who hold him in everlasting remembrance as a wise and skilled physician, "a good doctor," cherish his memory chiefly as a friend, a delightful companion, unsparing in service, always at hand when needed, whether in joy or in sorrow, wise in counsel, instinctively a physician of the soul. They knew him as an ever-present help in time of need.

1941—

WALTER REECE BERRYHILL, M.D.

by Robert A. Ross, M.D.

"Born, N. C. October 14, 1900; married Norma Connell of Warrenton 1930; two daughters; B.A., University of North Carolina, 1921; M.D. Harvard 1927; taught in boys' school and high school 1921-23; interne Boston City Hospital 1927-29; returned to University of North Carolina as acting associate professor of physiology 1929-30; resident in Medicine, Lakeside Hospital, Cleveland, 1930-31; instructor in Medicine, Western Reserve 1931-33; Associate Professor of Medicine and Director of Health Service, University of North Carolina 1933-41; Associate Dean, School of Medicine 1936-41; Dean 1941-; Professor of

Dr. Ross is Professor of Obstetrics and Gynecology in the School of Medicine of the University of North Carolina at Chapel Hill.

Clinical Medicine 1941-; U.S. Marine Corps 1917-1919; member of many local, sectional, national, special, and honorary societies; member of Staff of Watts Hospital, Durham."

This is the *vita* of Dr. W. Reece Berryhill. These data are factual, correct and complimentary, but *vita*, paradoxically, can lack *life*.

There are sixteen ancestors and relatives buried in the Old Steel Creek Churchyard in Mecklenburg County. His Phi Beta Kappa record here at the University was supplemented by service in the Marine Corps; his excellent record at Harvard Medical School was broadened by association with fellow North Carolinians in the teaching and hospital staffs in Boston and Cleveland.

By inheritance, background and disposition Dr. Berryhill was equipped to appreciate the groundwork of his predecessors, to

sense the feeling of the people of the State, to utilize the wisdom of the law-makers, to integrate these with the wishes of the University Trustees and to assume a dignified and effective position in the administrative framework of the University.

He saw Governors from three different colleges support the idea of a four-year medical school at the University, three Presidents of the State Medical Society, also from three different colleges, endorse the program, and was intimate with a strong group of earnest doctors and dedicated laymen, some alumni and some not, who



Dr. Berryhill

crystallized the efforts of six decades.

One of his most noteworthy achievements and the hallmark of his ability was in the consolidation of an eminent basic science faculty and the selection of a clinical group who had proved themselves elsewhere and who gave up tangible things to join in a new experience that would be wholly rewarding. As individuals and as a group they believed in Dr. Berryhill's word, integrity, purposefulness and presence. None has had reason to change his belief.

Research Has Always Been Significant

By Dorothy Long

During the last few years, and particularly since it became a four year school, the amount of research in progress at the University of North Carolina School of Medicine has increased enormously, but even in its very early days members of the faculty were interested not only in imparting medical and biological knowledge but in adding to it.

Although their opportunities for research were limited by the pressure of teaching and administrative duties, and often by the lack of adequate financial support, and though in some cases the results may have been limited by lack of training in research techniques, a study of the lists of scientific publications from the University is sufficient evidence of the value of their contributions.^{1,2}

The following are some of the accomplishments reported by the faculty of the School of Medicine not later than the 1930's.

Dr. Richard Henry Whitehead published more of the results of his work after he went to the University of Virginia, than he did while he was in North Carolina. But during the time he was dean of the School and professor of anatomy here he spent several summers, from 1890 to 1895, doing research in anatomy at Johns Hopkins and at the University of Chicago.³ Before he left in 1905, Dr. Whitehead had published a short monograph on the anatomy of the brain, and a number of articles, including several papers on the development of the interstitial cells of Leydig, and two on malignant teratoma.⁴

Dr. David Hough Dolley, who was professor of microscopic anatomy and pathology from 1906 to 1910, was particularly interested at that time in cytological changes following exhaustion and shock, and published several articles on the subject, including three done in collaboration with Dr. George W. Crile, with whom he had begun the work at Western Reserve Uni-

versity.⁵ Dr. Dolley continued this study after going to the University of Missouri in 1910. Another of the early professors, Dr. Wade Brown, who succeeded Dr. Dolley, began his research while he was professor of pathology here from 1911 to 1913, but published only one report: "Malarial pigment (Hematin) as a factor in the production of malarial paroxysm,"⁶ before leaving the University to begin work with the Rockefeller Institute for Medical Research, where he remained for a number of years. He continued for a while his interest in problems connected with malaria, and later specialized in the study of syphilitic infections, and of constitutional factors and physical environment in relation to heredity and disease.

Dr. E. W. McChesney, who began teaching bio-chemistry in 1931, was especially concerned with investigation of methods for the analysis of proteins, and had written several papers on various aspects of this subject before he left in 1937, going first to Baylor University for a year, and then to the Sterling-Winthrop Research Institute.

The work of Dr. William deBerniere MacNider is well known, and his publications make an impressive list. One might summarize, perhaps a bit inadequately, by saying that he made important observations on kidney function and pathology and on the adaptive alterations in specialized cells following injury.

Dr. Hubert Royster is also the author of a number of scientific publications, but since his accomplishments are the subject of another paper in this Bulletin, they need not be repeated here.

Among the members of the faculty who are still active in teaching and research, there are at least two who began some important scientific investigations during the period under discussion. Dr. W. Critz George, who was an instructor in zoology at the University from 1912 to 1916, and returned as associate professor of histology and embryology in 1920, has continued from that time to report on his research, which has been largely in two fields, that of vertebrate embryology, chiefly mammalian, and of histology of the blood in various animal groups.

Dr. D. A. MacPherson, head of the department of bacteriology, who joined the faculty here in 1923, has worked in the general field of pathogenic bacteriology.

Some of the research which was done did not result in the publication of scientific articles, but was nevertheless of value in

both academic and practical ways. Dr. Charles S. Mangum, for example, worked at Harvard for several summers, studying the embryonic development of the cranial nerves. He prepared a monograph on the subject but did not publish it. Dr. James B. Bullitt, who became professor of pathology and head of that department in 1913, worked on the problem of differentiation of various types of tumors, investigated trichinosis in rats, and also did field work in malaria for the State Board of Health.

From its early days, then, the faculty of our School of Medicine has been conscious of the value of original research. In "A survey of medical education at the University of North Carolina, February, 1933," which is the report of a committee composed of Drs. Mangum, Bullitt, and MacNider, the section discussing the activity of the School of Medicine says: "Since the very foundation of the School members of the teaching staff, in spite of the heavy teaching load, have managed to find time to take an active interest in scholarly achievement, indicated by research and contributions to biological and medical knowledge.

"This high type of scholarly endeavor, so necessary to the life of a great modern university, has been the chief factor which has won for the University of North Carolina, through the publications of its faculty, its position of prestige and leadership in the field of education. To this achievement members of the medical faculty have made a considerable contribution, and the publication of the results of their work has brought to some of them honor and distinction."⁷

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5. *Ibid.*, P. 379-380.
6. J. Exp. Med., 15:579-597, 1912.
7. Mangum, C. S., Bullitt, J. B., and MacNider, W. deB. *A survey of medical education at the University of North Carolina, February, 1933*. Typescript, p. 20-21.

Close-up: Professor of Pathology, Emeritus

James Bell Bullitt, M.D.

By George L. Carrington, M.D.

James B. Bullitt, A.B., A.M., Washington and Lee University; M.D. University of Virginia, came from the professorship of anatomy and pathology at the University of Mississippi to Chapel Hill in 1913 to teach histology and pathology. He continued as professor of pathology from that date until his retirement in 1947.



Dr. Bullitt

His sense of duty has always been strong. In Mississippi, when he found the medical school unpopular, he went into the state medical society and sold the school to the members. When he found hookworm a problem in Mississippi, he made the first extensive survey of infestation in that state. Later in Chapel Hill when the first World War broke out, he joined the Army Medical Corps and went to Europe.

Little things give the indications of his personality. An arrowhead had caught his fancy. How did the Indians make them? He had to solve that problem, and so spent many

hours making arrowheads. Someone had trichinosis. How did hogs in Chapel Hill get the disease? Chapel Hill rats were caught and sectioned until a satisfactory answer was found. Commercial eye shades were poorly shaped. Why put up with them when a piece of thin cardboard and a string with a few minutes' work produced one just right? Good caddies are rare; poor ones a nuisance, and any caddy rarely available in Chapel Hill. Why carry a heavy golf

Dr. Carrington practices general surgery in Burlington, and has long been a leader in medical progress in North Carolina.

bag when the simple steel frame was all that was necessary to hold the clubs? Traveling from home to office four trips a day required too much time for walking but an automobile was a nuisance for such a short trip, and besides a little exercise was good, so a bicycle was the perfect solution.

He has had the inquiring mind upon which the universe is registered, and the investigating mind that has seized upon this unfolding field for study. As a result of many interests, his mind is a regular encyclopedia of information. Another member of the faculty once apologized for being late with the explanation that he had asked Dr. Bullitt a question. The students understood this because Dr. Bullitt wanted all the pro's and con's and deviations and variations gone into. For practical examinations he was a past master at sectioning a vein to look like an artery. He must have spent hours teasing the pia arachnoid properly into position with the epididymis between the ciliary muscle and the retina with a few kidney tubules thrown in for good measure.

During the years that he was teaching in the School of Medicine at the University of North Carolina, his influence constantly increased, and in his students, what began as an admiration for the extent of his knowledge, grew into a love for the character and kindness of the man. It is interesting that a pathologist should have contributed the humanizing influence in a medical school, and that when his old students get together and discuss the old days, the group usually winds up with one of those former students saying, ". . . but most of all we love him."

These days, Doctor Bullitt occupies the gracious spot of "elder statesman" to the School of Medicine, and those who now lead its affairs. He is the courteous gentleman at all times. Almost every day to his office on the first floor of the School of Medicine Building, he is seen upon arrival moving up and down the hall, speaking to everyone he sees, seeking out those he does not, and most often leaving on the desks of many a sprig, a new-blown blossom, a bit of color and beauty.

His attentiveness to the interests of people is amazing. He knows when something fine has happened, and says a word of compliment. He knows when things have turned in with disappointment, and says a cheering word without ever admitting he knows. His humility, his courtliness, his understanding—how magnificent! No wonder it is that friends and alumni returning to Chapel Hill seek him out for a bit of conversation that means mutual pleasure and profit.

Teachers Take Time To Share Knowledge

By Myrl Ebert

The contribution to periodical literature by faculty members of the School of Medicine of the University of North Carolina is quite voluminous, as can be easily discovered by a brief perusal of journal indexes, reprint files, and the like.

But what is probably not so well known is the amount of "book" publication that has been done by this group. The following list will reveal somewhat the quality and quantity of effort in this genre. Included are "editorships," "contributing-authors," "authorships," as well as a translator, and a cartoonist!

Abse, David W. *The diagnosis of hysteria*. Bristol. John Wright & Sons. 1950. 112 pp.

Barnett, Thomas B. "Pathological anatomy following uranium poisoning" (with Roger C. Metcalf). v. 1, chapter 4, pp. 207-235 IN: Voegtlin, Carl and Harold C. Hodge. *Pharmacology and toxicology of uranium compounds*. New York. McGraw-Hill. 1949-53. 4 vols.

Brinkhous, Kenneth M. a chapter on "Purpuric states" IN: Conn, Howard F., editor, *Current therapy*, Philadelphia, Saunders, 1952-1954. And with Drs. Graham, Penick, and Wagner, has contributed several chapters on "thromoplasti, thrombin and precursors" IN: Tocantins, Leandro M., editor. *The coagulation of blood; methods of study*. New York. Grune & Stratton. 1955. 240 pp.

Craige, Ernest. *Our hearts were young with Gay; a pictorial history of the travels of the fifth auxiliary surgical group from Fort Sam Houston, Texas through the E.T.O. to Marseille, June 1944-August 1945*. El Paso. Ernest Craige. 1945.

Cromartie, William J. chapter IN: Thomas, Lewis, editor. *Rheumatic fever; a symposium* . . . Minneapolis. University of Minnesota. 1952. 349 pp.

Curnen, Edward C. numerous contributions, in as many titles, for instance: "Coxsackie virus infections" IN: Nelson, Waldo E., editor, 6th ed. *Textbook of Pediatrics*. 6th ed. Philadelphia. Saunders. 1954. 1581 pp. IN: Holt, L. Emmett, Jr. *Pediatrics*. 12th ed. New York. Appleton-Century. 1953. And chapters IN: International (2d) Poliomyelitis Conference. *Poliomyelitis*. Philadelphia, Lippincott, 1952. 555 pp. And IN: Rivers, Thomas M., editor. *Viral and rickettsial infections of man*. 2d ed. Philadelphia. Lippincott. 1952. 719 pp. IN: Conn, Howard F., editor. *Current Therapy*, Philadelphia. Saunders. 1954. IN

Miss Ebert is Librarian of the Library of the Division of Health Affairs of the University of North Carolina at Chapel Hill.

- Ferguson, John H. chapters IN: Fulton, John F., editor. *Textbook of physiology*. 16th ed. Philadelphia. Saunders. 1949. 1258 pp.
- Fleming, William L. "Long-term illness and the effect of the aging process on health", IN: Leavell, Hugh R. and E. Gurney Clark. *Textbook of preventive medicine*. New York. McGraw-Hill. 1953. 629 pp.
- Graham, John B. with Drs. Brinkhous, Penick, and Wagner IN: Tocantins, Leandro M., editor. *The coagulation of blood* . . . op cit.
- Hooker, Charles W. chapter on "Reproduction in the male" IN: Fulton, John F., editor. *Textbook of physiology*, 17th ed. Philadelphia. Saunders. 1955. 1275 pp.
- Miller, Augustus T. with: Morehouse, Laurence, E., and A. T. Miller. *Physiology of exercise*. St. Louis. Mosby Co., 1953. 355 pp.
- Penick, George D. with Drs. Brinkhous, Graham, and Wagner IN: Tocantins, Leandro M., editor. *The coagulation of blood* . . . op cit.
- Raney, R. Beverly. *A primer on the prevention of deformity in childhood*. Elyria, Ohio, National Society for Crippled Children. 1941. 188 pp.
With: Shands, Alfred R. *Handbook of orthopaedic surgery*. 4th ed. St. Louis. Mosby. 1952. 644 pp.
Now editing: American Academy of Orthopaedic Surgeons *Instructional Course Lectures*. Ann Arbor, Mich. J. W. Edwards. 1954-1955.
- Ross, Robert A. With: Groves, Gladys H. and Robert A. Ross. *The married woman; a practical guide to happy marriage*. New York. Greenberg. 1936. 278 pp.
- Royster, Hubert A. *Appendicitis*. New York. Appleton. 1927. 370 pp. *Historical sketch of the University of North Carolina Medical Department at Raleigh* . . . published under auspices of the Alumni Association. 1941. *Medical morals and manners*. Chapel Hill. University of North Carolina Press. 1937. 333 pp.
- Shands, Harley C. with: Massachusetts General Hospital, Psychiatric Service. *Case histories in psychosomatic medicine*, by the staff of the psychiatric service . . . edited by Henry H. W. Miles, Stanley Cobb, and H. C. Shands. New York. Norton 1952. 306 pp.
- Wagner, Robert H. with Drs. Brinkhouse, Graham, and Penick IN: Tocantins, Leandro M., editor. *The coagulation of blood* . . . op cit.
- Wells, Warner L. translated, from the Japanese, unique item: Hachiya, Michihiko. *Hiroshima diary*. Chapel Hill. University of North Carolina Press. In preparation.
- Welt, Louis, G. *Clinical disorders of hydration and acid-base equilibrium*. Boston. Little, Brown. 1955. 249 pp.
- Womack, Nathan A. Compiler and editor. *On burns*. Springfield, Ill. Thomas. 1953. 178 pp. IN: Moulton, Forest Ray, editor. *Approaches to tumor chemotherapy*. Washington, American Association for the Advancement of Science, 1947. IN: Cole, Warren Henry, editor. *Operative technic*. New York. Appleton. Century. 1949. 2 vols.
- Woods, Ernest H. *An atlas of myelography*. Washington, D. C., American Registry of Pathology. Army Institute of Pathology. 1948. 111 pp. IN: Golden, Ross, editor. *Diagnostic roentgenology*. Baltimore. Williams and Wilkins. 1952. 2 vols.

The Future Is In Our Hands

By F. Douglas Lawrason, M.D.

This year marks the seventy-fifth anniversary of medical education at the University of North Carolina. During these years great changes have taken place. The school is now a four-year School of Medicine and students for the first time can experience complete formal medical education at Chapel Hill. Since only the second class will graduate this June, the School in this sense is still in its infancy.

What the future holds for medical science and education at Chapel Hill is unknown. However, the question is not whether the School of Medicine will be a good medical school, but rather, will it be an outstanding educational center, an institution where science can be pursued for its own sake and education arise naturally out of the intellectual curiosity of men.

The four year School of Medicine and Hospital were built in Chapel Hill because it was proper that they be made a part of the University. The purpose of the School of Medicine as well as its responsibilities are identical with those of the University and can be clearly defined in their traditional sense of providing opportunity for its scholars to investigate and study nature. The university is the ideal environment for thought, investigation, and the acquisition of new knowledge. It should nurture the creative imagination of the individual and provide leisure for contemplation and development.

These basic principles apply in the same manner to the School of Medicine and if relinquished or obscured, the very purpose of its existence will be defeated. Thus, the concept that the School of Medicine is an integral part of the University of North Carolina is fundamental and must be kept foremost in anticipating the future.

The major responsibility of the School of Medicine is the education of its students, and in this sense its students extend from the freshman to the professor and include all those seeking knowl-

edge. Even though the ultimate success of a student's education depends in large part on his own motivation and curiosity, the proper guidance, opportunity and intellectual stimulation are essential for an inspiring educational experience. In this the teacher plays a dominant role for it is through his own inspiration that the teacher awakens and stimulates the student. It is difficult to assess intellectual stimulation from the standpoint of cause and effect; but, nevertheless, in spite of the tangibles, it can be said that if the quality of scientific education is dependent on those who are content to be conveyors of information or professional technicians, those students who would be more will suffer.

Thus, it is of primary importance that the faculty be imbued with a penetrating curiosity and a strong motivation for intellectual adventure and experimentation. Medical education must be rich in intellectual challenge and it must respect classical knowledge, but it is obligated to probe the unknown to bring scientific order out of chaos. If medical education does not embody these attributes, it is merely technical medical training.

Therefore, the academic responsibilities of the faculty are severe and exacting. If they are to pursue their scientific interests, enrich their experience and strengthen their role as teachers, they must be provided with time and opportunity, free from the encumbrances of the day, to explore their ideas. They must have time to establish investigative patterns which will be productive and rewarding to the individual.

This problem of free time plagues most medical schools today and is accentuated and more frustrating in the instance of the clinical investigator. The teacher in the clinical sciences is involved not only with teaching activities but with patient care and supervision, and more frequently than not his time is consumed by the endless demands of the private practice of medicine, extra-curricular teaching and lectures, meetings, committee work and with numerous administrative activities of the University. All these are secondary to his primary academic obligations.

This is not to question the importance of the many extra-curricular activities, for the merit of each is self-evident and should be pursued with utmost vigor where it is possible. It is merely a question of values involving purpose and function as well as potential time and available personnel. However, when such activities encroach upon the individual's time to the extent that they interfere with his primary function, a dangerous situation occurs and should be recognized as such. It is important that

the School of Medicine during these critical early years of development be cognizant of such diversion and be forthright in its approach to the future so that it does not prostitute its proper function for the oftentimes more attractive non-academic phases of medicine and education.

Such problems are common to all universities today. In the recent biography of Sir Harold Butler concern was expressed as it related to Oxford and Cambridge:

"It seems a sad frustration of purpose that the time and effort of so many men capable of higher things should be frittered away on details of organization and finance. The gift of teaching or the capacity for original thinking and research is much less common, and therefore much more precious, than administrative ability. When one finds the same sort of busy absorption in current affairs as is so familiar in the financial world—college meetings, university committees, faculty boards, close schedule of interviews and appointments, colloquies with government departments—one wonders whether the mechanics of university life is not submerging its spirit and obscuring its goal. At moments an easy suspicion invades my mind that to some professors university politics and the vast web of interlocking and overlapping bodies, by which the university is over-organized, offers a more attractive field for intellectual enterprise than does the severe discipline of learning. In any case, for the most of those caught up in the details of administration there could be little scope for sustained reading, still less for sustained reflection which is a much more exacting enterprise. For them there is little leisure for the contemplative life by which the finest fruits of the spirit are nurtured. The repose, the peace of mind, the freedom from pressing material care seem to have vanished. Until they are recovered, our culture will be poorer."

In this day and age the investment of time and effort of academic faculties is of primary consideration. As the activities of the School of Medicine and the University through its Division of Health Affairs gain momentum, the administration must maintain constant vigilance to protect their scholars from the easy and popular diversions of education as well as provide opportunity for their faculty and students to think, observe and experiment. The development of the individual by all means must not be sacrificed for the sake of efficient education. The individual, his curiosity and motivation, whether he be professor or student, must jealously be guarded and nourished if society is to reap the returns of his efforts. The School of Medicine, obligated to the academic mandate of the University, has a serious task ahead but the future will be great if consideration of the needs of the individual is held of paramount importance.

What About The Road Ahead?

By W. Reece Berryhill, M.D.

The accumulation of years is of little value to an individual or an institution unless age is accompanied by spiritual growth and by contributions to the welfare of the community. For the School of Medicine of the University of North Carolina the occasion now being celebrated affords an opportunity for a relatively old and yet a new institution to appraise the present with full appreciation of the worthwhile contributions of the past, and, more important, an opportunity to reaffirm its goals for the future. It is hoped that in 1979 on the centennial of its beginning considerable progress will have been made toward the achievement of these aims.

In spite of all the vicissitudes which have beset it over the past three quarters of a century the School of Medicine has achieved and maintained an enviable reputation throughout the country for

1. The character and quality of its students;
2. The excellence of its teaching and the sound and thorough educational program in the basic medical sciences;
3. The close personal relationship between faculty and students, which in addition to all other educational and moral values has resulted in a large body of very loyal alumni;
4. A continuing interest in the fundamental science of medicine through sound research contributions by a greatly understaffed faculty with very inadequate facilities and financial support;
5. Its interest in and substantial contribution to the continuation education of the practicing physicians of the State, this School having the distinction of being the first in the country to inaugurate medical extension courses for physicians on a state-wide basis, in 1916.

As a result of these contributions over the years toward the

Dr. Berryhill is a Professor of Medicine, and Dean of the School of Medicine of the University of North Carolina at Chapel Hill. He first joined the faculty in 1933, and has been dean since 1941.

improvement of medical care the people of the State through the General Assemblies of 1947-1953 have generously provided funds for the expansion of the old School of Basic Medical Sciences into the present new four-year School of Medicine with related teaching and service facilities. Greater opportunities bring greater responsibilities. It is the intent of the faculty to continue the sound philosophy and concepts of our predecessors in the older School and to expand and extend these in terms of the medical needs of this and future generations.

In the final paragraph of the report of the National Committee for the Medical School survey to the North Carolina Medical Care Commission in 1946, is the following significant statement: ". . . The University through the four-year School of Medicine and the medical center will develop *ultimately* a philosophy of medical education, research, and medical care which will make it a service facility for the whole state." It is in terms of developing a sound philosophy and of furnishing effective leadership in the above areas that the future goals of the School must be set and achieved.

Since education is the primary responsibility of a university and of its professional schools it should be obvious that the first obligation of this School of Medicine is to develop a sound philosophy of education for the undergraduate medical student, the graduate student (intern and resident), and the practicing physicians of the State (continuation education). For the nearly three years the present School has been in operation, the major interests and efforts of the faculty have been of necessity almost entirely directed toward teaching and developing clinical services in the hospital to provide for the best possible care of patients.

In the education of the undergraduate medical student it is the aim of the faculty to provide an environment in which the student can achieve an understanding of both the art and science of medicine; a realization of the place of the physician in the community, and a feeling of responsibility for the welfare of the community in which he lives; the development of a sense of responsibility for his continuing education through his own efforts; and finally, whether he becomes a general physician or a specialist, an appreciation of the patient as a person, with some basic understanding of the physical as well as the emotional, social, and economic factors which influence the health of his patients. In short, our objective is to graduate well-trained physicians with a social conscience.

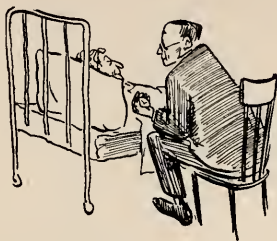
No educational institution can fulfill its obligation to society without adding to existing knowledge. A spirit of inquiry is essential to maintain excellence in teaching, in the care of patients, and in attempts to improve medical service in the community. Whether the results of a particular investigation would appear to be immediately practical is perhaps not too important. It is of the utmost importance, however, that this School provide opportunities and the sympathetic environment for its faculty and students to engage in research in the basic medical sciences, in clinical medicine, and in the social and community aspects of medical services. It is to the credit of the faculty that with all the heavy load of teaching and other work incident to getting underway, very creditable research activities are going on in all departments. That there is developing a close relationship between departments in the Divisions of the Natural and the Social Sciences and the Humanities and the School of Medicine in research is further justification of the wisdom of having the School of Medicine an integral part of the University. Already, there is need for more staff and more laboratories if we are to take full advantage of the opportunities and the obligations.

Furnishing some degree of leadership in improving medical care in the State is the third objective. The methods for doing this are many and varied, but in the final analysis must be educational—both for the medical and ancillary professions in the health field, and for the public. Obviously the production of increasing numbers of all the variety of personnel in medical and allied professions and offering opportunities for their continuing education are the two most essential ways of improving medical care for the State.

Obviously there are many as yet unexplored methods of accomplishing this objective. Both time and money will be required for continuous experimentation in an area which has great potentialities for providing improved medical and hospital service for the State. It is not a "one way street" and will require the best thought of all agencies and institutions concerned with better health for this State, and must involve the professional staff of community hospitals throughout the State. Essentially this undertaking is medical education in a broad sense.

Finally, it must be pointed out that the National Committee realized that an educational program with such broad and far-reaching objectives would take time and thought to effectuate if

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ALUMNI NOTES

Thomas Lane Stokes, '45 has opened his office for the practice of general surgery at The Colonial Medical Center, 1400 Colonial Avenue, Norfolk, Virginia. Lane recently completed his surgical training at Jefferson Hospital in Philadelphia with Dr. John H. Gibbon.

Allen D. Tate, Jr., '46, was elected the "Young Man of the Year" for 1954, of Graham, North Carolina.

C. L. Saunders, '48, formerly in the practice of obstetrics and gynecology in Martinsville, Virginia, on March 15 joined a clinic in Welch, West Virginia.

Karl B. Pace, Sr., '12, chosen the Nation's General Practitioner of the Year, spoke to the medical student body on "Hints to General Practitioners" on March 15. His lecture was sponsored by the Alpha Kappa Kappa fraternity.

Mary Alice Vann Fox, '46, is having an interesting time in Egypt; her husband, also a doctor, is stationed there with the Navy. They have two children. The present address is: c/o Samuel M. Fox 3rd, LT, MC, USN, (NAMRU-3), APO 231, Box "E", c/o Postmaster, New York, New York.

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it were to be done wisely and in a lasting manner. The wording is "... *ultimately* develop a philosophy . . . which will make it a service facility for the whole State." No institution can become full grown overnight.

The faculty is unmoved in its determination to build soundly in reaching the goals outlined even though with the facilities available this may be a slower process than we would have hoped. I have every confidence that the results will completely vindicate the sincerity and the integrity of the School and its faculty, and that there will be continuous progress toward the achievement of these goals. The support of people of North Carolina through the General Assembly will in the final analysis determine this rate of progress.



STUDENT ACTIVITIES

SENIORS ASSIGNED

Announcement has been made from the Office of the Dean of the assignment of current graduating seniors in the School of Medicine. These assignments were handled under the National Matching Service, and are as follows:

Henry W. Abernethy, Roper Hospital, Charleston; Harvey Adams, D. C. General Hospital; Julian S. Albertgotti, Army Medical Service Hospitals, Camp Brooke, San Antonio; George W. Barnard, Army Medical Service Hospitals, Camp Brooke, San Antonio; Robert G. Brame, Colorado General Hospital.

Ralph E. Brooks, Jr., Cooper Hospital, Camden, New Jersey; E. T. Chandler, North Carolina Baptist Hospital, Winston-Salem; M. A. Cronland, Spartanburg General Hospital; Walter E. Deyton, City Memorial Hospital, Winston-Salem; Griggs C. Dickson, North Carolina Memorial Hospital.

Edward O. Diggs, Kate Bitting Reynolds Hospital, Winston-Salem; Charles Council Dudley, Jr., Duke Hospital; P. Z. Dunn, Jr., University Hospitals, Ohio State; Charles F. Edinger, Greenville General Hospital; Harris L. Evans, Greenville General Hospital.

John W. Foust, North Carolina Memorial Hospital; John W. Gainey, Jr., Roper Hospital, Charleston; James E. Glenn, Naval Hospitals, Jacksonville, Fla.; Fred W. Glover, Jr., Duke

Hospital; Ira D. Godwin, North Carolina Memorial Hospital.

James D. Groseclose, City Memorial Hospital, Winston-Salem; James W. Hayes, III, Medical College of Virginia, Richmond; Charles L. Herring, University of Virginia Hospital; J. A. Hill, University Hospital, Arkansas; William D. Huffines, Johns Hopkins Hospital.

V. L. James, Jr., University Hospitals, Ohio State; Samuel G. Jenkins, Jr., North Carolina Memorial Hospital; Cecil L. Johnson, Bellevue, 3rd Medical, New York University; Robert C. Jordan, Jr., Naval Hospitals, Charleston; Samuel B. Joyner, Presbyterian Hospital, New York.

William F. Kampschmidt, City Memorial Hospital, Winston-Salem; James L. D. Lamm, Parkland Hospital, Dallas; A. S. Lineberger, University Hospitals, Ohio State; William L. London, IV, Children Medical Center, Boston; Lloyd C. McCaskill, Roper Hospital, Charleston.

Rodney L. McKnight, North Carolina Memorial Hospital; Clarence R. McLain, Jr., Indiana University Medical Center; Andrew C. Miller, III, Kings County Hospital, Brooklyn; J. T. Monroe, Jr., Massachusetts General Hospital; Thomas P. Moore, D. C. General Hospital.

Stewart L. Mooring, University of Virginia Hospital; Frank C. Morrison, Jr., University Hospitals, Ohio State; Mary F. Munch, Baltimore City Hos-

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Seniors (from page 41)

pital; George I. Richardson, University of Virginia Hospital; O. F. Roddey, Jr., North Carolina Memorial Hospital.

Carl W. Rogers, Naval Hospitals, Charleston; William C. Ruffin, Jr., Duke Hospital; Robert T. Savage, City Memorial Hospital, Winston-Salem; Palmer F. Shelburne, Duke Hospital; Henry L. Stephenson, University of Virginia Hospital.

Francis A. Stewart, City Memorial Hospital, Winston-Salem; Robert L. Summerlin, Naval Hospitals, Portsmouth; George R. Tucker, Jr., Naval Hospitals, Charleston; W. J. Waddell, Fellowship at University of North Carolina; Alexander G. Webb, Jr., Naval Hospitals, Bethesda.

William H. White, Jr., Greenville General Hospital; William W. White, State University of Iowa Hospitals.

PHI CHI CHORAL

There was music in the air and on the video waves, March 8, when the Phi Chi Medical Fraternity Choral Group, under the direction of Miss Betty Ray, performed on the "Younger Set." This program for the younger members of the audience of WUNC-TV, was thoroughly enjoyed by the members of the chorus. Plans are now being made for a repeat performance next month, for entrance in the Valkyrie Sing, and for a program of Choral music for Student-Faculty Day in May.

JUNIORS

Wedding bells will ring this summer for three members of the Junior class.

Bob Murray of Raeford, and Miss Marjorie Johnston of Fremont, Nebraska, will be married in Nebraska in June. Marge is a member of the Pediatric Nursing Service of NCMH.

WHITEHEAD SOCIETY

The Whitehead Medical Society will sponsor its annual Student-Faculty Day on May 7. The skit will be held in Memorial Hall on the main campus. Further details and time schedules will be announced later.

During the month of March, the Whitehead Medical Society sponsored a series of four films dealing with medical topics. They were presented Wednesdays at 7 P.M. in the Medical School Auditorium. The four movies, with the discussion led by various faculty members are as follows:

March 2—Melanoma and Skin Cancer—Dr. George W. Crane; March 9—Accident Service—Dr. Warner Wells; March 16—Physical Diagnosis of the Chest—Dr. Thomas Barnett; March 23—Physical Diagnosis of the Abdomen and Perineum—Dr. John Sessions.

On April 11 at 8 P.M., in the Clinic Auditorium, the Whitehead Society sponsored the annual Whitehead Lecture, by Dr. Robert W. Wilkins, an alumnus of the U.N.C. School of Medicine, and currently associated with the Boston University School of Medicine. This lecture was in conjunction with the seventy-fifth Anniversary of the School of Medicine, the celebration of which began officially on Tuesday, April 12.

Bob is the son of Dr. and Mrs. R. L. Murray, Raeford.

Another June wedding is planned by John Deyton and his fiancée, Miss Clara Brauer. Clara is a member of the Pediatric nursing Service, and is from Norlina. John calls Spruce Pine, home.

An August wedding is planned by Bill Purcell of Laurinburg, and Jane McKeithen of Raeford. Jane is a Senior at WCUNC and will graduate in June. Bill is secretary of the Whitehead Society.



WITH THE FACULTY

BACTERIOLOGY

Dr. William J. Cromartie has been elected Councilor of the North Carolina Branch of the Society of American Bacteriologists for 1955.

MEDICINE

Dr. Bernard G. Stall, III, who is currently at the Brookhaven National Laboratory at Upton, Long Island, will join the Department of Medicine as Assistant Professor on May 1, 1955.

Dr. Charles H. Burnett and Dr. Frank Winter participated in the UNC Postgraduate Course at Goldsboro on February 15 speaking on "The Medical and Ophthalmological Aspects of Hypertension" and "The Ophthalmological and Vascular Aspects of Diabetes Mellitus."

Dr. Jeffress G. Palmer discussed "Anemia" and "Chemotherapy of Leukemia and Allied Diseases" at the UNC Postgraduate Program in Elizabeth City on February 16.

Dr. John T. Sessions participated in the Postgraduate Program at Statesville on February 22, presenting papers on "Dysphagia" and "Peptic Ulcer".

Dr. T. Franklin Williams attended the meeting of the Tristate Medical Association at Old Point Comfort, Va., on February 21.

On Tuesday evening, March 8, Dr. Thomas W. Farmer addressed the Charleston County Medical Society, Charleston, S. C. on "Diagnosis and Treatment of Remediable Conditions of the Brain and Spinal Cord".

ANATOMY

The U. S. Atomic Energy Commission has approved the support of joint research by Dr. C. D. Van Cleave and Dr. C. T. Kaylor with a contribution of \$10,500 annually for a three-year period.

The grant will be used in a study of the double isotope effect of Ca^{45} and Sr^{89} on the pattern of distribution in the body, particularly in bone.

Doctors Van Cleave and Kaylor completed this year a five-year study under the same auspices on the distribution, retention, and elimination of radioactive beryllium.

SURGERY

Dr. Warner Wells has done a translation of a diary of a Japanese doctor during first three months after A-bomb attack. It is to be published by the University Press.

Dr. Richard M. Peters will present a paper before the American Surgical Association on April 27: "Relationship between Per Cent of Carbon Dioxide in Inspired Air and Degree of Brachyconstriction."

Dr. Colin G. Thomas presented a paper on thyroiditis before the Southeastern Surgical Congress in Atlanta, Georgia, February 23.

Drs. A. Price Heusner and B. R. Raney participated in the Post-Graduate Course in Albemarle on March 23: "Low Back Pain."

PEDIATRICS

Dr. Frank L. Horsfall, Jr., member of the Rockefeller Institute for Medical Research was a guest lecturer of the Department of Pediatrics on January 31. Dr. Horsfall addressed members of the faculty, house staff and students on "Mechanisms and Control of Viral Multiplication."

Dr. Edward C. Curnen, Dr. Nelson K. Ordway, Dr. Arthur H. London, and Dr. Harrie R. Chamberlin took part in the Postgraduate program in General Medicine at Chapel Hill on March 8-10. Dr. Curnen participated in a panel discussion on gastrointestinal bleeding and gave a presentation on "Acute Infections of the Respiratory Tract in Infants and Children." Dr. Ordway gave a presentation on "Diarrhea." Dr. London participated in a panel discussion on vomiting and Dr. Chamberlin participated in a panel discussion on abdominal pain.

Dr. Warren E. Wheeler of the Children's Hospital at Columbus, Ohio, was a guest lecturer of the Department of Pediatrics on March 14. Dr. Wheeler spoke at the Noon Conference to members of the faculty, house staff and students on "E. Coli in Relation to Enteritis."

Dr. Curnen will attend the meeting of the Commission on Influenza of the Armed Forces Epidemiological Board of which he is an associate. The meeting will be held in Ann Arbor, Michigan on March 17 through 19.

Dr. Ordway will address the Guilford County Medical Society in Greensboro, N. C. on "Management of the Infant with a High Intestinal Obstruction" on April 7.

Dr. Ordway addressed the Tennessee Medical Society at Chattanooga on April 10 and 11. Dr. Ordway's presentations were on "Parenteral Fluid

PREVENTIVE

Dr. Wm. L. Fleming attended the February meeting of the American Social Hygiene Association Board of Directors in New York and was appointed to serve as a delegate from the American Social Hygiene Association to the National Health Council.

Dr. Fleming also attended meetings in January and February in Baltimore and Washington, D. C. to plan program of the annual Venereal Disease Symposium in Washington, D. C. In connection with his position as president of the American Venereal Disease Association he will preside over the annual meeting of the American Venereal Disease Association in Washington, D. C. at the time of the annual symposium (April 28-29) and over one of the sessions of the annual VD symposium.

PATHOLOGY

Dr. Robert D. Langdell, Instructor in Pathology, has been granted a leave of absence for two years for duty with the United States Army. Dr. Langdell's assignment is in the hematology laboratory of the Army Graduate Medical School in Washington, D. C., where he will be doing hematologic research with Colonel William Crosby.

Therapy" and "Growth and Development."

Drs. Curnen, Ordway and Chamberlin participated during the month of March in the WUNC-TV series, "Picture of Health." Dr. Chamberlin gave a presentation on "Infancy—The Time of Most Rapid Change," Dr. Curnen gave one on "Immunization of the Young Infant and Child," and Dr. Ordway's presentation was on "The First Day at School."

PSYCHIATRY

Dr. Shands, will also attend the meeting of the American Psychoanalytic Association May 6-8. Dr. David Hawkins, Dr. Harley Shands and Dr. Ham, will attend the meeting of the American Psychosomatic Society, May 4-5 in Atlantic City. At the Annual Meeting of the American Psychiatric Association May 9-13, Dr. D. W. Abse will discuss David Limentani's paper entitled "Symbiotic Identification in Schizophrenia". All three of these meetings will be held in Atlantic City.

April 1-4, Dr. George Ham attended the meetings of the Group for the Advancement of Psychiatry in Asbury Park, New Jersey. Dr. Ham is a member of the Committee on Medical Education which has just completed a report shortly to be distributed on "The Curriculum of the Psychiatric Residency Training Program".

Dr. Ham spoke on "Some Aspects of Training Recreation Personnel in Teaching Hospitals", during the afternoon session of the Second Southern Regional Institute on Hospital Recreation, April 4, Chapel Hill.

On April 26, Dr. Ham will participate in a panel discussion on "Emotional Factors in Cardiac Disease", at one of the meetings of the American College of Physicians in Philadelphia.

The Child Psychiatry Unit of the Psychiatric Center, North Carolina Memorial Hospital, School of Medicine, is presenting on April 25, a case for discussion at the North Carolina Conference for Social Service in Winston-Salem. The paper is being given in connection with the theme: "Mobilizing Resources for Children." Dr. Jim Proctor, child psychiatrist, Mr. Albert Linch, Chief Psychiatric Social Worker, and Miss Virginia Long,

OBSTETRICS

Dr. Robert A. Ross addressed the meeting of the Tri-State Medical Association at Fort Monroe, Va., Feb. 21-22, on the topic: "The Evaluation of the Sterile Couple." March 7-11, he was in New Orleans for the Post Graduate Assembly, where he spoke on the topic: "The Evolution of Therapy and Its Results in the Treatment of Carcinoma of the Cervix."

In late April, Dr. Ross will go to Hershey, Pa., to speak at the American Academy of Obstetrics and Gynecology, District III, on "Geographic and Socio-Economic Factors Which Have Influenced our Specialty." In May, he will serve on the examining board of the American Board of Obstetrics and Gynecology in Chicago, and go from there to Quebec for a meeting of the American Gynecological Society. In late July, Dr. Ross is scheduled to serve as dean of Obstetrics and Gynecology at the Southern Pediatric Seminar at Saluda.

Dr. Charles E. Flowers addressed the Charleston (S.C.) County Medical Society, Feb. 7; and the County Medical Society in Jackson, Miss., February 10. On Feb. 23 he was in Albemarle speaking in connection with the School's continuation education program. On March 22 he was in Spartanburg, S. C., for an address before the County Medical Society.

Dr. Leonard Palumbo was in Clinton speaking to the Sampson County Medical Society on Feb. 8; and on Feb. 10 he attended the South Atlantic Obstetrical and Gynecological Society in Williamsburg, where he appeared on the program. Dr. Deborah Leary also attended that meeting.

psychiatric social worker, will represent the Department of Psychiatry at the meeting.

Seventy-Fifth Anniversary Program

The program is complete for the exercises commemorating the 75th anniversary of the beginning of medical education at the University, to be held April 12-13. Geared to future plans, responsibilities and ambitions rather than past accomplishments, the program will bring to the campus a number of men prominent in the state and nation as well as a panel of distinguished members of the University faculty.

Following the first session Tuesday evening, April 13, there will be an "open house" at the School of Medicine, featuring especially the new laboratories and facilities for the basic medical sciences. The three panel sessions will be held in Hill Hall.

Tuesday, April 12

7:30 p.m.—Presiding: Provost J. Harris Purks, *Medical Education at the University of North Carolina, Past, Present, Future*.
Chancellor R. B. House; Dr. Henry T. Clark, and President Gordon Gray

7:45 p.m.—Panel:
The State University and Medical Care in the State
Mr. L. P. McLendon, ('12), Greensboro, N. C., Moderator
Dr. Osler Peterson, Chapel Hill, N. C.

Mr. Irving E. Carlyle, Winston-Salem, N. C.

Dr. John Truslow, Medical College of Virginia

Dr. W. M. Coppridge, ('16), Durham, N. C.

Dr. Walter B. Martin, American Medical Association

9:30 p.m.—Open House—The School of Medicine

Wednesday, April 13

Presiding: Dr. Fred C. Hubbard, President, Medical Alumni Association

10:30 a.m.—Panel:

Financing Medical Education

Dr. Joseph C. Hinsey, Cornell-New York Hospital Medical Center, Moderator

Mr. J. C. Cowan, Greensboro, N. C.

Dr. Vernon W. Lippard, Yale University School of Medicine

Dr. James Watt, ('33), National Heart Institute

Dr. John Truslow

12:30 p.m.—Buffet Luncheon—Morehead Building

2:30 p.m.—Presiding: Chancellor R. B. House

Panel:

Humane Letters and Human Illness

Professor Everett W. Hall, Philosophy, Moderator

Professor B. L. Ullman, Classics

Professor A. C. Howell, ('24), English

Dr. Nathan A. Womack, ('21), Surgery

Professor U. T. Holmes, Jr., Romance Philology

Professor C. P. Lyons, English

Professor S. E. Leavitt, Spanish

6:30 p.m.—Annual dinner, meeting Medical Alumni Association, Lenoir Hall

POSTGRADUATE

Plans are under way for postgraduate programs in Asheville and Morganton next fall in cooperation with physicians of those communities and adjacent counties.

The Third Annual Postgraduate Course in General Medicine was held March 8-10, at North Carolina Memorial Hospital. Approximately 50 physicians registered for the course dealing with gastro-intestinal diseases, gynecological problems and pulmonary diseases.

Continuation Education Announcements

CLEVELAND COUNTY

The following postgraduate medical course was planned in cooperation with a committee of doctors from Cleveland and adjoining counties, to be held in Shelby, April 6-May 25, 1955:

Wednesday, April 6

4:00 p.m.—Infertility

7:00 p.m.—The Management of Toxemias of Pregnancy

Dr. Deborah C. Leary, Assistant Professor of Obstetrics and Gynecology, School of Medicine, University of North Carolina.

Wednesday, April 13

No meeting—Annual Medical Alumni Day Featuring 75th Anniversary of Medical Education at the University of North Carolina

Wednesday, April 20

4:00 p.m.—Management of Constipation

7:00 p.m.—The Pathologic Physiology of the Gastro-intestinal Tract—The Basis of Symptoms and of Rational Treatment

Dr. Thomas P. Amy, Associate Professor of Medicine, Medical College, Cornell University.

Wednesday, April 27

4:00 p.m.—Topic to be announced

7:00 p.m.—Newer Developments in Pediatric Therapy

Dr. James G. Hughes, Professor of Pediatrics, School of Medicine, University of Tennessee, Memphis.

Wednesday, May 4

No Meeting—State Medical Society Meeting

Wednesday, May 11

4:00 p.m.—The Eye in General Disease

7:00 p.m.—The Treatment of Eye Conditions in General Practice

Dr. Frank C. Winter, Assistant Pro-

COURSES NEXT YEAR

Postgraduate Medical Programs at Statesville and Albemarle were completed Tuesday and Wednesday, April 5-6. This is the first time that the six-weeks postgraduate medical program has been offered at either of these cities.

BEFORE MED SOCIETY

On Tuesday night, March 8, Dr. D. W. Abse, associate professor of psychiatry, spoke to the Elisha Mitchell Society on "Clinical Research in Schizophrenic Disease".

TO ADDRESS CONFERENCES

Dr. John A. Ewing will speak on alcoholism at the following conferences: Kanuga Conference for Episcopalians, June 10; North Carolina College in Durham, June 16; Agricultural & Technical College in Greensboro, June 23; Fayetteville State Teachers College in Fayetteville, June 30.

fessor of Surgery (Ophthalmology), School of Medicine, University of North Carolina

Wednesday, May 18

4:00 p.m.—Emotional Concomitants of Organic Disease

7:00 p.m.—The Psychosomatic Concept of Certain Organic Diseases

Dr. Kerr L. White, Assistant Professor of Medicine, School of Medicine, University of North Carolina

Wednesday, May 25

4:00 p.m.—Some Comments on Auscultation

7:00 p.m.—Some Teaching Cases

Dr. J. Willis Hurst, Cardiology Department, U. S. Naval Hospital, Bethesda, Maryland

All meetings will be held at the Cleveland Springs Country Club, Shelby.

Editorials

Alumni Loyalty

There is no finer observation concurrent with the seventy-five years of medical education at Chapel Hill than that the students who have studied here are unusually loyal to the School of Medicine. Theirs is a loyalty that stems from appreciation of what the School did for them; but more, appreciation for the stalwart emphasis upon consistent scientific progress.

This loyalty these graduates have demonstrated in so many ways. All of those who today invest themselves in this advancing program are mindful of this loyalty, grateful for it, and anxious that they shall through the years merit its continuance.

An Anniversary of Merit

Why should an anniversary be celebrated? If such an occasion were devoted exclusively to bragging about the past, there would be no merit in it. If such an occasion sought only to show up the present as something advanced only in years and not in accomplishments, there would be no merit in it. If such an occasion were to emphasize the greatness of great men of the past and ignore the greatness of those who live and work today, there would be no merit in it.

But there is merit in such a celebration—the seventy-fifth anniversary of the beginning of medical education at Chapel Hill, for example—when the occasion is used as a fresh and constant reminder of one's obligation to the past: an obligation that can be met only by looking ahead.

It must eventuate that scientific knowledge is accelerated, and all its facets magnified for better service to mankind. That is the end of such a celebration, the end to which all of those concerned with the School of Medicine of the University of North Carolina now dedicate themselves. That adds merit to the celebration of an anniversary.

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These were the three main objectives when North Carolina launched its Good Health program in 1946. The original state health commission called them "the mutually indispensable legs" of the long-range health improvement plan. "We cannot have enough doctors without more hospitals," said the commission, "nor enough hospitals without greater popular ability to pay for hospital service . . . and such ability to pay on the part of the poorer half of our population is impossible without insurance."

What Has Been Accomplished

MORE DOCTORS

Expansion of the University medical school at Chapel Hill to a full four-year program was the state's answer to the doctor shortage. Of the 241 students now enrolled all but four are from North Carolina. The first class of these home-grown and home-trained doctors was graduated in June, 1954.

MORE HOSPITALS

More than 192 local hospital projects—new hospitals, additions to old hospitals, nursing quarters, health centers, and other health facilities—have been built in all sections of the state. The number of counties without any hospital beds has been reduced from 33 to 15. By 1956 approximately 7200 new hospital beds will have been opened in the Tar Heel State.

AND MORE BLUE CROSS!

Through an accelerated enrollment program in both the urban and rural areas of the state, Hospital Care Association of Durham has been meeting this third great need of the Good Health Plan. Since the program was launched membership in Durham Blue Cross has **MORE THAN DOUBLED!** Over a Quarter - Million people are now covered, and payments to hospitals and doctors exceed \$3½ million a year.



As the Hospital Care Association begins its 22nd year of service, we renew our determination to provide the best possible protection at the lowest practicable cost. To this end we request the continuing cooperation of the State's medical profession.

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Authors of HIROSHIMA DIARY: Dr. Warner Welis of the Department of Surgery, U.N.C. School of Medicine, Dr. Michihiko Hachiya, Director of the Hiroshima Communications Hospital and Dr. Neal-sifuji, translator. (See article on page 2).

THE SCHOOL OF MEDICINE - THE MEDICAL FOUNDATION
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THE BULLETIN

of the School of Medicine
in cooperation with the Whitehead Society
and the Medical Foundation
of the University of North Carolina

Vol. 3

October 1955

No. 1

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A best seller from the UNC Press on the Hiroshima disaster

A Dose Of Reality

By Audrey Turner

On the morning of August 6, 1945, a small, sad-faced man, in shorts and undershirt, lay sprawled on his living room floor, exhausted after a night's duty as an air raid warden. He looked through his open doorway into the garden, and the new day.

Suddenly, there was a blinding flash—then another.

In those terrible instants the world took a giant stride toward oblivion.

On the tenth anniversary of the atom-bombing of Hiroshima, the University of North Carolina Press published *Hiro-*

HIROSHIMA, August 1945. Looking east toward the Fukuya Department Store (left) and the Chugoku Press (right). Mount Hijiya in the background.



shima Diary, written by Michihiko Hachiya, M.D., Director, Hiroshima Communications Hospital, translated and edited by Warner Wells, M.D., Assistant Professor of Surgery, University of North Carolina School of Medicine.

Two hundred and twenty thousand people died from the blast. A new and deadly disease scourged many who had not been blown to bits, crushed under the debris of a quarter million demolished homes, or baked alive. Nearly half of Hiroshima's one hundred and ninety physicians had been killed.

Dr. Michihiko Hachiya picked his naked, bleeding body out of the wreckage and made his way to the fire-gutted Hiroshima Communications Hospital. To heal himself while attempting to succour and comfort the hordes of sick and dying who flocked to his hospital was the task that confronted the Japanese physician. Without drugs, equipment, or adequate buildings Dr. Hachiya went to work.

During the endless nights, punctuated by the awesome screams of the injured, Dr. Hachiya recorded each day the events of the next seven weeks on scraps of paper and bits of wood. The *Hiroshima Diary* is a bitter dose of reality, made palatable by the hope, compassion and unquenchable humor of the author.

Already in its third printing, the English, Dutch, German, Italian and French rights to the *Diary* have been sold, and throughout the world people will know more fully the terrifying implications of the "atomic age."

The immense work of translating the original Japanese diary into English, of retaining the integrity and precise meaning of such a personal document, and of expressing it in a language using entirely dif-

HIROSHIMA, AUGUST 1945. Shimomura's watch store. On the right is the Seiyoken Building.



ferent symbols to construct its words was a task so tremendous that few would attempt it—not even for the rewards of fame and fortune.

The man who did the job has turned his back on both. The proceeds from the sale of the book are to be used entirely for Japanese charities, and though Dr. Hachiya will receive much well-deserved acclaim, the world may largely overlook the contribution of the translator.

Dr. Warner Wells, a native North Carolinian, born in Durham on Christmas Eve, 1913, graduated from Duke Medical School and began private practice in 1947 as a general surgeon in Raleigh. In 1950, Dr. Wells closed his office in order to join the Atom Bomb Casualty Commission as a surgical consultant. Members of the Commission were stationed at Hiroshima and



HIROSHIMA, AUGUST 1955. A party is given by Dr. Hachiya and his staff in honor of Dr. Warner Wells (in absentia) on the day of publication of **HIROSHIMA DIARY**.

Nagasaki for purposes of studying the delayed effects of the atom bombs dropped on those cities in 1945. Dr. Wells was in Japan for two and one half years, and during this time he came to know and admire the Japanese medical profession. It was his fervent desire to know the Japanese people personally and not merely as medical case histories which led him to Dr. Hachiya and the *Hiroshima Diary*.

(Continued on Page 21)

Application of Isotopes in Biological Research

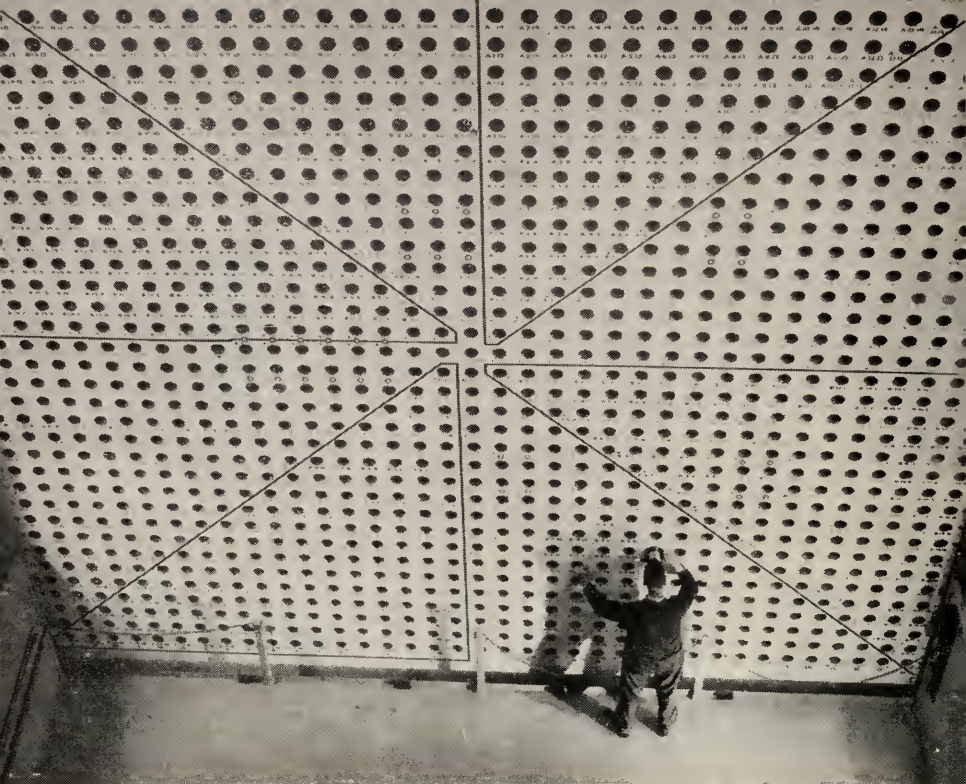
—by *Dr. Bernard Stall*

The use of radioactive isotopes as tracers of biological events was introduced in 1923 by George Hevesy who studied the uptake of lead by plants using the naturally occurring isotope of lead, Thorium D. Early work in this field was sharply limited by the unavailability of radioisotopes of the biologically important elements. The advent of the cyclotron and other high energy particle accelerators in the nineteen thirties made possible the artificial production of a considerable variety of radioactive isotopes. However, the most important impetus to work in this field was the building of atomic reactors which has made possible the production of large amounts of a wide variety of radioactive isotopes of high activity in purified form. The impact of all this on the "life" sciences has already been considerable and its potential is even greater.

Isotopes are nuclides of the same atomic species. They have an identical number of protons (i.e. net nuclear charge) and, hence, atomic number and differ in nuclear mass (atomic weight). Such related atomic entities have essentially identical chemical properties but differ slightly in physical properties dependent on mass. Many isotopes are physically stable and, indeed, naturally occurring elements are actually mixtures of several stable isotopes. It is possible to separate isotopic mixtures into their component atomic entities by appropriate physical means and such separated stable isotopes have been used as tracers. However, for the most part analyses of such materials within biological systems are relatively insensitive and time consuming and usually require elaborate and expensive equipment.

Radioactive isotopes which are indistinguishable chemically from all stable isotopes of the same element have the additional physical property of emitting one or more types of radiation in the process of disintegrating or "decaying" to a stable form. These radiations may be of the alpha, beta, or gamma types, or a combination of these. Alpha and beta radiations are charged particles having the masses of a helium nucleus and an electron

Dr. Stall is an Assistant Professor, Department of Medicine, UNC School of Medicine. Formerly Associate Physician in the Department of Medicine, Division of Physiology, Brookhaven National Laboratories.



SOUTH FACE OF BROOKHAVEN REACTOR—Tons of pure uranium metal must be loaded through the holes in this shielding wall of the Brookhaven reactor into the graphite moderator before uranium atoms can fission, or split, in a chain reaction. The reaction releases atomic particles, known as neutrons, for use in experiments and for production of radioisotopes.

The rows of holes in the photo are eight inches apart and represent the arrangement of the uranium metal as it resides in the graphite moderator. The holes can also be used to insert certain types of metals and other substances to be irradiated by neutrons. Some of these materials emerge with radioactivities of thousands of curies of beta and gamma rays, forms of radiation now used in industry and agriculture.

The technician in the photo is standing on an elevator which enables him to move to any level of charging holes. He is using a periscope to view the handling of these highly radioactive sources by remote control, by means of grappling tools and other equipment. A wall of heavy concrete five feet thick protects him from radiation given off by the reactor.

—Courtesy of the Brookhaven National Laboratory, Upton, N.Y.

respectively and gamma radiation is uncharged having the properties of electromagnetic waves or x-rays. Radioisotopes emit their radiations at specific energy levels expressed in electron volts (for practical purposes this is abbreviated as "Mev" for "million electron volts"). A single isotope may have several different radiations of the same type, but each identifiable at a specific energy level. This makes possible the simultaneous use of several different isotopes, the individual activity of each being counted by using apparatus which allows wave-length or pulse height discrimination.

The intensity of the radioactivity of an isotope declines exponentially with time and is ordinarily expressed as the isotopes' "half-life," or length of time for a given isotope to lose 50% of its activity. For different isotopes these half-life values vary from microseconds to billions of years. Its value for each radioisotope, however, is a constant of the most immutable sort, being unaffected by physical conditions or chemical state.

Some long-lived radioisotopes occur naturally in fair abundance as, for example, radium and uranium. However, for the most part such naturally occurring radioactive substances have little or no biological importance other than through their toxic effects and so do not lend themselves to wide use in tracing biological events. C^{14} , a very pertinent isotope biologically, does occur naturally probably as a result of the bombardment of atmospheric nitrogen by cosmic radiations. However, its extremely minute concentration in naturally occurring carbon precluded its use for indicator purposes. Its natural occurrence in the earth's atmosphere, in gradually increasing amounts due to its rate of production exceeding its rate of decay, is utilized as a means of determining the age of organic fossils.

While many isotopes are biproducts of nuclear fission occurring during reactor operation, they are most conveniently prepared for tracer work by the bombardment of a suitable purified target material by a stream of high energy particles. In the case of high energy accelerators, (e.g. cyclotron, synchrocyclotron, cosmatron, bevatron) the particles are either protons or deuterons. Obviously, since the reaction of either of these with a target substance will result in an increase in the number of protons in the target nucleus, the product of such a reaction will be a different element chemically from its parent. Because of limitations of concentration of the accelerated particles as well as the relative inefficiency of charged particles in penetrating the nucleus, only

a fraction of the target substance will be converted to the isotope with a consequent necessity for chemically separating the product from the target substance. Because of the minute quantities involved such separations require the addition of non-isotopic material of the same element as the isotope. Isotopes produced in this fashion, therefore, have a relatively low specific activity (i.e. ratio of radioactivity to chemical concentration). For certain tracer applications such a situation is undesirable.

An atomic reactor is capable of producing a highly concentrated stream of highly reactive "thermal" neutrons. Neutrons, in contrast to protons and deuterons, are uncharged and hence have less force to overcome in order to penetrate nuclei and therefore are much more efficient isotope producers. Since the interaction of neutrons with nuclei results in no change in net charge, the product of this reaction is the same chemical element as the target substance. These facts make possible the production of isotopes of great purity and high specific activity. Some of the isotopes most useful in biology are produced in this fashion.

The spectrum of tracer applications of radioisotopes has ranged from studies of the geographical movements of mosquitoes to the biochemical reactions producing light in the firefly. The great variety of ways in which these substances have lent themselves to problems of biological research precludes any comprehensive treatment of the subject here, but a few examples may serve to demonstrate the usefulness and, in some instances, uniqueness of this tool. There is no aspect of intermediate metabolism of plants or animals in which important advances have not been made as a consequence of the availability of isotopes.

Certain elements, e.g. manganese and cobalt, have long been known to be necessary in trace quantities for the maintenance of certain forms of life. The amounts of these substances present in various tissues are far too small to permit analysis by ordinary chemical methods. However, by using appropriate radioactive isotopes it has been a relatively simple matter to study the absorption, organ and tissue distribution, and excretion of such substances.

Certain biologically very potent compounds such as the steroid hormones are normally present in the living organism in such minute concentrations that chemical methods for measuring them are inadequate or entirely lacking. In some instances a radioactive "tag" may be introduced into the compound either through orthodox chemical synthesis or by supplying the "tag" in an

assimilable form to a plant or microbiological system which synthesizes the material. Once tagged (usually with C^{14}) the material can then be isolated and introduced into an intact animal and its localization, degradation, and excretion followed with great accuracy.

One of the most useful applications of radioisotopes to date has been in the study of the movement of ions across membranes separating the various compartments of body water. In the steady state there is a constant concentration of various ions within the individual compartments. Under certain conditions there may be profound changes in rates of ion movement without any net change in ionic concentration. In certain instances profound changes in ion concentration reflect ionic movements, but the rapidity of change and return to normal is such that the reaction would be missed completely or, at best, studied inadequately with conventional methods of chemical analysis. The advent of radioactive isotopes has made it possible to study ion movements under such circumstances with great accuracy. In many situations where there is great stability of absolute concentration of various ions on the two sides of a membrane, it has been found that actually there is a dynamic movement of ions back and forth even under basal conditions. Thus earlier concepts of "permeability" as applied to biological systems have required radical revision. Differential concentrations of sodium and potassium maintained between the inside and outside of cells can no longer be assumed to be due to an absolute impermeability of the cell wall to one ion or the other, but in some instances active transport mechanisms have been demonstrated and the pathways through which energy is made available for the transport have been elucidated.

A widely used method utilizing isotopes is the so-called "dilution" type of experiment. An isotope of an element, e.g. chloride, is introduced into the body in a known amount of radioactivity. After allowing sufficient time for complete mixing with the chloride in the body, analysis of a sample of blood serum for radioactivity and chloride concentration will furnish the necessary data for calculating the total amount of chloride in the body.

Some tissues contain certain substances in fairly constant concentrations which are unaffected by the rate at which the substance is entering into chemical reaction. However this will be reflected in the substance's "turnover" time which can conveniently be determined by measuring the speed at which the material in the tissue is replaced by radioactively tagged substance which

has been introduced into the blood.

In addition to tracer studies in which isotopes are indispensable, they have been utilized also in the modification of such conventional methods of physiological study as the measurement of total circulating red cell volume, cardiac output, organ blood flow, etc., to render them technically easier and increase their accuracy and sensitivity.

There are presently available many useful isotopes of the biologically important elements. However, there are a few deficiencies. There are no useful radioisotopes of nitrogen or oxygen and, until quite recently, there were none of calcium or magnesium that were suitable for use as tracers in human subjects. The development of new isotopes to satisfy specific needs is a continuing program and progress in this field is steadily being made.

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The Clinical Use Of Radioactive Isotopes In N. C. Memorial Hospital

By William H. Sprunt

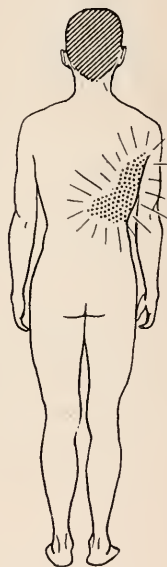
Many of the most important advances in science and medicine have been fostered and accelerated by the apparent biologic urge of the human to kill his fellowmen in warfare. This was true of the radioactive isotope program, which was tremendously enhanced because the chain-reacting uranium pile could be used to produce isotopes in huge quantities as "by-products" of the more highly regarded military materials.

In clinical medicine, radioisotopes are useful both as tracers, as they are in basic research, and as means for direct radiation therapy. As tracers they are used in small, biologically safe, microcurie amounts. For therapy, more hazardous millicurie amounts are required. This discussion will be concerned chiefly with the isotope program in progress at the North Carolina Memorial Hospital.

RADIOIODINE (I-131)

Although it has several weaknesses, the radioiodine test of thyroid function is well established clinically and is in increasing demand. It is safe, reasonably pleasant for the patient, accurate within the clinical range of error if performed with care, and is readily available in many hospitals and private offices. At this hospital the simplest testing method is used. The patient is given a known quantity of radioiodine to drink and asked to return in twenty-four hours. At that time the amount of irradiation coming from the patient's thyroid is measured and compared to the irradiation from a control solution measured under similar conditions. The result is expressed as the percentage thyroid uptake and in euthyroid individuals is 15 to 45% in twenty-four hours. There are other more accurate but more complicated examinations which measure the rate of thyroid uptake as well as the levels of the radioiodine in certain blood components; we hope to adopt some of these in the future.

Animal experiments to determine the effectiveness of radio-



Dr. Sprunt is assistant professor in the Department of Radiology, UNC School of Medicine at Chapel Hill.

iodine for thyroid therapy preceded studies of function. Before 1940 it was demonstrated that the thyroid could concentrate radioiodine sufficiently for the radiation to destroy a large portion of the gland. The clinical use of this method of therapy is now well established and increasing numbers of thyrotoxic patients are being treated in this way at this hospital. This is true despite the limitations imposed by age, pregnancy, and the delayed effect of medication.

The percentage of thyroid carcinomas which concentrate iodine sufficiently to achieve curative radiation dosages is small, and in our institution surgery remains the treatment of choice. As yet we have had no opportunity to treat functioning thyroid metastases with radioiodine.

Dr. Thomas Farmer, Department of Neurology, has been using radioiodine in combination with di-iodofluorescein and human serum albumen for localization of brain tumors. As tracer amounts of these substances are concentrated by some tumors, Geiger counters can be used to locate and measure the radiation in the afflicted area.

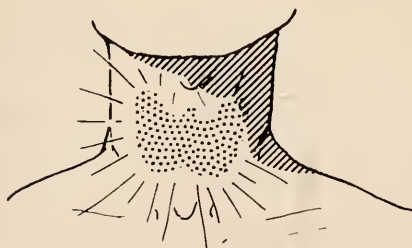


RADIOGOLD (Au-198)

Radioactive colloidal gold is used in North Carolina Memorial Hospital both for clinical research and for direct radiation therapy. It is characteristic of radiogold that it is taken up by the lymphatics and carried to lymph nodes. Dr. C. G. Thomas, Department of Surgery, has utilized this fact to study the

lymphatic spread of tumors. It has been shown in other institutions that radiogold transported in this manner to lymph nodes can be used as a means giving cancerocidal radiation in some instances.

Most of the radiogold used here has been for the treatment



of recurrent malignant effusions from the peritoneum and pleura. With a shielded syringe to protect the physician from the intense radiation, the gold is injected and the patient is rotated to distribute the material over the surface of the body cavity. Our results with this method have been roughly the same as those reported by others with about 50% slightly to greatly improved.

So far we have not used radiogold for direct injection into tumors, but this is contemplated in the future for cases in which routine methods of treatment are of doubtful value.

RADIOPHOSPHORUS (P-32)

Radiophosphorus was the first artificial radioisotope to find widespread clinical use for the treatment of malignant disease, the leukemias. Today in our hospital x-ray and some of the newer drugs have largely replaced radiophosphorus in the treatment of this group of diseases. It is useful for the treatment of polycythemia vera, though the results are about the same as with spray x-radiation. Phosphorus-32 can be combined with chromic phosphate ($\text{CrP}^{32}\text{O}_4$) in colloidal solution for local injection into tumors and for treatment of malignant effusions, having some advantages over radiogold. A study of this material for cancer therapy will soon be undertaken.

Radiophosphorus is concentrated in rapidly growing tissues as compared to normal tissues. For that reason Dr. Paul Bunce, Department of Urology, is using this isotope to study the rate of growth and other characteristics of bladder tumors as a part of the clinical research program.

At North Carolina Memorial Hospital the radioactive isotope program is well underway, and it will be expanded as new uses for the radioisotopes are recognized, as more personnel are added, and as new research studies are suggested.

Panel On Humane Letters And Human Illness

PROFESSOR STERLING A. STOUDEMIRE, Head
Department of Romance Languages, *Presiding*

Moderator: PROFESSOR EVERETT W. HALL, Philosophy

Participants

PROFESSOR U. T. HOLMES, Romance Philology

PROFESSOR A. C. HOWELL, English

PROFESSOR S. E. LEAVITT, Spanish

PROFESSOR C. P. LYONS, English

PROFESSOR B. L. ULLMAN, Classics

DOCTOR NATHAN A. WOMACK, Surgery

On April 12 and 13, 1955, the School of Medicine and the Medical Alumni Association presented a program which was highly significant in two respects. The first was the occasion for the program, the 75th anniversary of the beginning of medical education here at the University—the recognition of a long and honorable history which has in this decade culminated in the development of a medical center and four year school which are already achieving a national reputation. The second was the broad interest, timeliness, and high caliber of the program itself. A distinguished group, including statesmen, physicians, medical educators, and educators from the field of humanities participated in the discussion of topics which are live issues among all who are interested in medical education.

It has not been possible to publish the proceedings of the two day program, but significant parts will be presented in this year's issues of the Bulletin. Below is presented the first installment of the panel on Humane Letters and Human Illness, which elicited a great deal of interest among those who heard it. It has been edited from a recording made at the time of presentation. Additional installments of the panel will appear in subsequent issues.

Professor Stoudemire

Ladies and gentlemen, you will notice on your program that Chancellor House is supposed to present this panel to you. Unfortunately he is out of town, and I have been pressed into service. Some months ago I had a letter from Chancellor House appointing me to a committee, which rather embarrassed me

because there were about a dozen or fifteen medical men and one academician. I felt very much out of place. I found, however, that the medical men were not such ogres as I thought they might be. Out of that large committee there was appointed a small committee consisting of Dr. Nathan Womack, Dr. Sylvester Green and myself to play around with the idea of a panel on humane letters and human illness. I think Dr. Womack coined the title. For a long time there had been a good deal of talk by some professors in the School of Medicine about the excellent preparation that young men going into medicine had in the sciences, but deploring the fact that they did not know much else. The dean of the medical school, the head of the department of surgery, and a number of others were concerned about lack of knowledge of the humanities. Our committee of three worked up the idea of the panel and selected these distinguished gentlemen you see at the table to take part.

I now turn the program over to the moderator, Professor Everett W. Hall, of the Department of Philosophy. Dr. Hall.

Professor Hall

Under your, shall we say, faintly archaic title, Dr. Womack, "Humane Letters and Human Illness," I take it we are really to discuss this afternoon, as some of you in the audience may have guessed, the place of humanity in medical education. We have, as already indicated, just one lone representative of the human illness end of the title, the rest being men of letters. The procedure we shall follow, I hope, is somewhat as I shall now indicate: one lone medical man will give his analysis, for which we will allow him all of seven to ten minutes; and then each of the men of letters here represented will be allowed about five or six minutes to make an initial statement, and I want to warn them all that they may be interrupted even in their initial statement at any time, when interruption seems appropriate. And then we shall turn to give and take, at which time I hope the audience will feel free to participate as you feel you have a point to make or a question to ask; I wish when you do that you would stand and I will be happy to recognize you. First, then, Dr. Womack. I suppose you must think—or some of the audience must think—that someone was trying to put something over on medicine by pitting all these men of letters against you, but I'm not really too worried about you. I know you, and I think you probably can take care of yourself in our midst. Moreover, the news that has

been spread across the pages of our newspapers last night and this morning—I refer, of course, to the success of Dr. Salk's vaccine—would certainly seem to show that medical education cannot be in such a bad way. Indeed, I think your case is already made, so I'm sure you won't mind if I keep you to a maximum of ten minutes for your initial statement.

Dr. Womack

There are two phases of this problem, Professor Hall, that I think we could well afford to spend some time on this afternoon. One concerns the relationship that should exist between a medical school and its parent university, and the other has to do with the value of general education in medicine.

I think it should be stressed at the outset that we are not satisfied with what has been achieved in medical education. I say this in spite of the fact that, in the lifetime of many of us in this room, the achievements made by medicine are so considerable as almost to be unbelievable. Diseases that once were commonplace so that we had come to accept their crippling and killing as part of the burden of mankind now no longer exist or at least are extremely rare. This progress has not been sporadic but has during the past few years been gaining in momentum following almost an exponential curve. It would seem then that we could safely say that here is one area in which educational forms and educational practices are in good order. Such is not completely true, however, for in the face of these great achievements, medicine remains a subject of great criticism. One sees this exemplified in the actions of our state and Federal legislatures and in the popular press. This is not the place to go into the validity of this criticism. It is interesting to note, however, that it is not based on the failure of technological achievement but rather on economic, moral and social grounds. For this progress has itself created problems. In preventing death, we have preserved a cripple. How is he to survive? The aged once presented no great problem; there weren't many of them. There are now and this problem reflects itself not only as it relates to the individual but also to his family and his community. Society finds itself concerned, therefore, with iatrogenic problems and medicine finds itself concerned.

In providing an educational program that will give students the sort of background for the solution of these and other problems that may arise, we face our first subject for discussion, namely, does a medical school really belong in a university? For

many, many years medicine has vacillated in and out of our universities as an academic discipline. Perhaps the present robe of academic respect it wears we owe to the influence of the German universities in the last century. In this country there are still some medical colleges that are isolated from any intimate university relationship, and less than a decade ago there were many who were outspoken in their wishes for complete geographic dissociation of the University of North Carolina School of Medicine from the Chapel Hill campus. It required no little effort to prevent such isolation, and now that the School of Medicine is geographically part of the campus, I think there are many of us in the faculty who feel a sense of isolation and from some parts even antagonism. I think, therefore, that we should consider the relationships between the many colleges in this University insofar as the School of Medicine is concerned. The Medical School and its associated Hospital require a tremendous budgetary outlay. How can this be handled without financial injury to the general University, and prevent any tendency to starve the general University campus? Will such an association between the School of Medicine and the general campus tend to dull scientific zeal and acumen? These are issues that I think must be met.

Now, next I think we might bring into our discussion the benefits, if any, that a liberal education might give to one who elects to practice medicine. Let us consider as a definition of liberal education the following: "Men and women are liberally educated to the degree that they are literate and articulate in verbal discourse, in the language of the arts, in the symbolic language of science; informed concerning their social and spiritual environment and concerning their relationship thereto as individuals; sensitive to all the values that endow life with meaning and significance and able to understand the present in the perspective of the past and the future and to decide and act as responsible moral beings." This definition was brought forth by the committee on restatement of the nature and aims of a liberal education at the meeting of the Association of American Colleges in 1943. While some of us might disagree with parts of the wording, I think this definition might well serve as a focal point for our discussion.

Now, there is none of us that would deny that all of these qualities are worth while, not only for the physician, but also for the lawyer or the teacher or the industrialist or even the college professor. What concerns us in medicine is the cost. Medical edu-

cation is a long and expensive process. One must spend four years in a medical school, two years usually in graduate education and now there has been superimposed upon this two years in military service. We must consider very carefully, therefore, the amount of time that must be spent in so-called pre-medical education. There is no unanimity among medical schools. Most schools prefer men who have had a four-year preparation for medicine, although whether this should be primarily in the sciences or in the liberal arts is by no means settled. There are very few schools that will not accept an excellent student who has had but three years of premedical education, and there are still some schools that will take a medical student after only two years of academic preparation.

If it is desirable and worth the price that one must pay to obtain such a general education, how can the student be stimulated and guided. Certainly all of us are in agreement that the passing of a certain amount of credit in various course subjects does not in itself confer liberal education. We all know too well that the acquisition of a Bachelor of Arts degree does not correlate completely with the above definition of a liberal education.

Medicine in any of its aspects becomes a practice of competent judgments. Does a liberal arts education aid in the development of a sound judgment or are there other media through which a knowledge of man and his social relations can better be obtained more easily and quickly than by studying the humanities and the natural and social sciences? Does there reside an element of danger in that, in trying to provide our physician with a balanced education in the humanities, the general sciences, in social behavior and in medical science, we might not achieve such thinness that a profound progress is impeded?

At this point I think we might consider a quotation from Virchow, the father of cellular pathology: "If medicine is ever to fulfill its great ends, it must enter into the larger political and social life of our time; it must indicate the barriers which obstruct the normal completion of the life cycle and remove them. Should this ever come to pass, medicine, whatever it may then be, will become the common good of all. It will cease to be medicine and will be absorbed into that general simplified body of knowledge which is identified with power—when we have the exact knowledge of conditions of existence of individuals and of peoples, then only will it be possible for the laws of medicine and philosophy to gain the credence of general laws of humanity. Then only will

the Baconian 'knowledge is power' become accomplished fact."

It seems to me that there is much truth in the above quotation and in fact I think we can already state that a portion of this has already come to be.

If a fair knowledge of the humanities is necessary in the broad education of a physician in the light of the above statement by Virchow, does it not become equally true that a knowledge of the structure and function of the human being becomes also essential information for the humanist? We accept in our liberal arts education the need for a knowledge of the principles of living processes as exemplified in the invertebrates. Should this be done to the exclusion of the structure and function of the human being? By this is not meant that the need for the detailed study of medicine in any of its parts be a function of liberal arts. It does suggest, however, that one with a sound liberal arts education who also has some grounding in the physical basis of human thought and human emotions might have a better interpretation of this thought and these emotions as he concerns himself with them in the study of humane letters.

And now, Professor Hall, I think I have used up my ten minutes.

A Dose Of Reality

(Continued from Page 6)

This is not the chronicle of bitterness and hate one might expect from the pen of a defeated foe. The book has no villain; at least not in human form. Its significance lies in the honest portrayal of fellow humans caught in catastrophe. In his magnificent translation, Dr. Wells has not depicted the differences that separate men, but rather the similarities which unite them.

For an almost impossible task, beautifully done, we owe a tremendous debt of gratitude to Dr. Warner Wells. Dr. Hachiya himself expressed it perfectly in a letter written to Dr. Wells on June 30, 1955, after receiving a copy of the publisher's typescript of *Hiroshima Diary*.

"Mimeograph arrived," Dr. Hachiya wrote, "I wondered myself whether it is my own or not. After seeing and reading into it for a few minutes, I became aware of my diary wearing magnificent clothes woven together with nicest English words and sentences having a number of gracious explanatory notes. I have been intensely moved. It is not my own. It is yours and mine forever."

Abstracts from the

Research Conferences School of Medicine

A forum in which the results of investigative work can be reported and discussed is afforded by the School of Medicine Research Conference held on the last Thursday evening in each month at 7:30 o'clock in Room 324 of the School of Medicine Building. The meetings are open to all persons interested.

The Editors of The BULLETIN present here abstracts from several of the presentations, and hope to include other abstracts in subsequent issues.

Studies of Mechanisms of Action of Antihistamine Compounds By W. R. Straughn, M.S., Assistant Professor of Bacteriology

Studies on possible mechanisms of action of antihistamine compounds have been carried out utilizing bacterial systems. It was found that enzymatic decarboxylation of the amino acid histidine by whole cell preparation to form histamine was inhibited by various antihistamines. Cell-free enzyme preparations were not appreciably inhibited by these compounds. The results obtained have been interpreted as indicating that the major mechanism of antihistamine action is alteration of cell permeability to histamine rather than interference with the formation of histamine in cells and tissues.

Responses of the Blood Coagulation Mechanism to Focal Necrosis of Body Tissues

By George D. Penick, M.D., Assistant Professor of Pathology

Certain disease states, notably some that arise as complications of pregnancy, appear to be associated with a widespread type of intravascular "clotting." These changes in the clotting mechanism are in some way related to the existence within the body of a focus of tissue necrosis. Either thrombotic or hemorrhagic sequellae may occur. Evidence is presented in this paper to suggest that tissue damage resulting from an exposure to cold may be within this same general group of diseases. Further, an exploration of experimental data concerning the basic pathologic mechanisms involved will be made.

Studies on Hemolysin of Group A Streptococci By John H. Schwab, M.D., Instructor in Bacteriology Extracts of sonic disrupted group A streptococcal cells con-

tain two, apparently distinct, hemolysins. One of these products is extremely labile and the second requires acid activation. Several properties of these cellular hemolysins have been determined and it is concluded that they have the general characteristics of enzymes. On the basis of these properties they can also be distinguished from the previously defined streptolysins O and S. These studies include the following observations: relative effect of various agents on the hemolytic activity, effect of temperature on rate of reaction, effect of lysin concentration, effect of pH and various ions, heat stability, and effect of the species of red cell used. Comparison of the relative amounts of each of these hemolysins produced under slightly altered conditions, or with different strains of group A organisms, indicates that they can each vary independently. This is further evidence that these cellular hemolysins are distinct and specific streptococcal products.

Some Aspects of Histidine and Glutamic Acid Metabolism

By J. E. Wilson, Ph.D., Assistant Professor of
Biochemistry and Nutrition

Nutritional studies on growing and adult rats in these laboratories have shown that the conversion of histidine to urocanic acid is not a significantly reversible process. This is also true in the hamster.

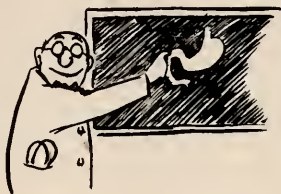
Studies on the metabolism of glutamic acid 1-C^{14} in surviving liver slices also indicate that the pathway of degradation from histidine to glutamic acid is irreversible. The radioactive label was found in arginine and proline, and seems to have been present in a number of other amino acids as well, but histidine isolated from these tissues had no radioactivity.

Antiaccelerator Activity of Canine Plasma

By Robert H. Wagner, Ph.D., Research Associate, Department of
Pathology

Dr. Wagner described a new factor in blood which appears to slow the rate of blood clotting. The new factor has been called anticonvertin, because it destroys the activity of another factor convertin. Convertin has a powerful action in accelerating blood clotting. The similarity of anticonvertin to another clotting regulator, antithrombin, was pointed out. Attempts to separate anticonvertin and antithrombin have not yet been successful. It was suggested that high levels of anticonvertin in blood would produce clotting difficulties.

Due to limited space in this issue a number of the research extracts could not be published. They will be carried in future issues.



WITH THE FACULTY

ANESTHESIOLOGY

Drs. David A. Davis, Kenneth Sugioka, and Doris Grosskreutz will participate in a postgraduate course in Anesthesia at Duke University on October 20, 21 and 22. Dr. Davis will serve as moderator of a panel on "Pharmacology of Anesthetic Drugs" and speak on "Ventilation in Anesthesia" on Thursday, October 20. Dr. Grosskreutz will serve as a panel member in a discussion of "Choice of Technique in Anesthesia" on Friday, October 21, and Dr. Sugioka will serve as a panel member on Saturday, October 22, in a discussion of "Anesthetic Emergencies."

Dr. Davis gave two lectures at the Kentucky State Medical Association in Louisville during the week of September 26.

BACTERIOLOGY

Dr. Milton Huppert has resigned to accept a position as Chief, Mycology Research Laboratory, Veterans Administration Hospital, San Fernando, California.

Dr. Abraham Widra, who received his Ph.D. from the University of Pennsylvania in 1954, has joined the department as Instructor beginning September 1, 1955.

Dr. Widra presented a paper at the Annual Meeting of the American Institute of Biological Sciences at East Lansing, Michigan, on September 7, 1955. His topic was "Studies on the

Cytochemistry of Bacteria."

John Cazin, Jr., a graduate student in the department has been awarded a National Science Foundation Pre-doctoral Fellowship for the academic year 1955-56.

The following grants have been received by staff members:

W. R. Straughn, Assistant Professor, a grant from the Office of Naval Research for a study of the factors involved in the observed increase in the incidence of fungus infection following antibiotic therapy, in the amount of \$3,278, effective September 1, 1955.

G. P. Manire, Associate Professor, a grant from the National Institutes of Health for studies on the nature of the toxic components of psittacosis viruses and their role in the pathogenesis of this disease, in the amount of \$15,342 for a two-year period beginning September 1, 1955.

John H. Schwab, Assistant Professor, a grant from the National Institutes of Health for investigation of previously unreported toxic metabolites of group A streptococci, in the amount of \$5,232, effective September 1, 1955.

John H. Schwab, a grant from the University Research Council for a study of streptococcal hemolysins, in the amount of \$400.

BIOCHEMISTRY

Dr. James C. Andrews, Head of the Department of Biochemistry, returned to Chapel Hill on September 1 after an absence of several months. During that time Dr. Andrews was in Formosa, serving as consultant for the Foreign Operations Administration to the School of Medicine, University of Taiwan. He and Mrs. Andrews left Formosa on June 1 and made a leisurely trip back home by way of Asia and southern Europe.

Dr. M. K. Berkut has just returned from Oak Ridge, Tennessee, where for three months he served as Research Participant in the Medical Division of the Oak Ridge Institute of Nuclear Studies. His work there involved the use of radioactive rubidium, potassium and fluorine in mineralizing tissues.

MEDICINE

Dr. J. G. Palmer attended the meeting of the Charlotte Society of Internal Medicine Seminar in Roaring Gap on September 9th and 10th, and participated on a panel concerning "Nature and Chemotherapy of Leukemia" with Dr. L. H. Stoddard, Professor of Pathology from the University of Georgia. Dr. L. G. Welt spoke to the same group on "Anterior Pituitary and Adrenal Cortical Disorders."

Continuation grant for Dr. T. W. Farmer from the United States Public Health Service for a graduate medical training grant in Neurology was approved for the period 7-1-55 through 6-30-56 in the amount of \$21,106.

Dr. James P. Alexander, former member of the N. C. Memorial Hospital house staff, has been awarded a traineeship from the National Institute of Arthritis and Metabolic Diseases for the period August 1, 1955 through July, 1956. He will be working with Dr. John T. Sessions, Jr.

Dr. James W. Woods has been awarded a grant from the United States Public Health Service for "A Study of Drug Therapy in Hypertension". This grant was effective September 1, 1955 and will continue through August 31, 1956 in the amount of \$5,882.00.

Supply grants in the amount of \$500 each have been awarded the following Fellows in the Department of Medicine:

Dr. Walter Hollander, Jr.—from the United States Public Health Service.

Dr. Daniel T. Young—From the United States Public Health Service.

Dr. T. F. Williams—from the Life Insurance Medical Research Fund.

OBSTETRICS

Dr. Robert A. Ross served as an examiner on the American Board of Obstetrics and Gynecology in Chicago May 12-20. Following this service Dr. Ross attended a meeting of the American Gynecological Society at the Chateau Frontenac in Quebec.

* * * *

Dr. Charles E. Flowers served as a member of the faculty of the Obstetrics Section of the Southern Pediatric Seminar in Saluda July 25-30. During the Tri-State Obstetric-Pediatric Meeting in Daytona Beach, Florida, September 12-14 Dr. Flowers delivered an address on "Obstetrical Care in Rural Communities."

PATHOLOGY

Dr. K. M. Brinkhous, Professor of Pathology, gave an invited paper entitled "Physiologic Basis of Transfusion Therapy in Hemophilia" in the Section on Pathology and Physiology of the Annual Meeting of the American Medical Association in Atlantic City in June, 1955.

Dr. John B. Graham, Associate Professor of Pathology, was one of

the six speakers in a symposium on "Biochemical Genetics of Man" at the Annual Meeting of the American Society of Human Genetics in Lansing, Michigan on September 5th. His paper was entitled "Biochemical Genetics of Blood Coagulation."

Doctors Robert Wagner and K. M. Brinkhous of the Pathology Department and Mr. Wade Brannan of the senior class have recently described a hitherto unknown inhibitor of blood coagulation. This newly discovered factor, "anticonvertin" was described in the June 1955 issue of the Proceedings of the Society for Experimental Biology and Medicine.

Dr. Cecil Hougie of London, England, has recently joined the Pathology Department as an Instructor. Dr. Houghie is a graduate of the Medical School of Manchester University and is in the process of obtaining a Ph.D. in medicine from the University of London.

PHARMACOLOGY

Dr. Fred W. Ellis of the Pharmacology Department lectured at the Summer Schools on Studies of Alcohol at East Carolina College at Greenville, North Carolina College in Durham, Fayetteville State Teachers College, A & T College in Greensboro, and Appalachian State Teachers College in Boone. These lectures were sponsored by the North Carolina Alcoholic Rehabilitation Program.

PEDIATRICS

Drs. Edward C. Curnen, Nelson K. Ordway, Harrie R. Chamberlin and Judson J. Van Wyk attended a joint meeting of the American Pediatric Society with the Society for Pediatric Research, the Canadian Paediatric Society and the British Paediatric Society at Quebec early in June. Dr. Ordway presented a paper on "Reversible Respiratory Depression in Salicy-

late Intoxication" which was written in collaboration with Drs. Robert W. Winters and James S. White. Dr. Van Wyck presented a paper at this meeting on "The Treatment of Thyrotoxicosis in Children." Dr. Curnen was elected to the Council of the American Pediatric Society and Dr. Van Wyk was elected to membership in the Society for Pediatric Research.

On August 27 Dr. Ordway presented a paper on "Management of the Dehydrated Child" at a meeting of the South Carolina Section of the American College of Surgery and the Self Memorial Hospital staff at Greenwood, South Carolina.

The Department of Pediatrics of the University of North Carolina has been given a grant of \$17,000 from the Elsa U. Pardee Foundation of Midland, Michigan for the construction and equipping of an endocrinology laboratory. The laboratory will be under the direction of Dr. Judson J. Van Wyk, Assistant Professor of Pediatrics, who joined the staff in May. Prior to coming to North Carolina, Dr. Van Wyk was associated with Dr. Lawson Wilkins in the Pediatric-Endocrine Clinic of the Harriet Lane Home, Johns Hopkins Hospital, Baltimore, Maryland. The laboratory will be completely equipped for studies in steroid chemistry.

Dr. Van Wyk recently spoke to the Pee Dee Medical Society in Bennettsville, South Carolina and to the District Four Medical Society, Goldsboro, North Carolina on "The Management of Children with Ambisexual Development." On October 6 he is to address the American Academy of Pediatrics in Chicago on "Hypothyroidism in Children" and will also participate in a seminar on endocrine diseases in childhood.

Dr. Elwood B. Coley who completed his residency in pediatrics at the North Carolina Memorial Hos-

pital in June has opened his office in Henderson, North Carolina. Dr. and Mrs. Coley recently announced the birth of their son, Elwood, Jr.

Dr. Joseph D. Corpening has opened his office in Salisbury, North Carolina. Dr. Corpening completed his residency in pediatrics at Memorial Hospital in June.

PHYSIOLOGY

Dr. Jessica H. Lewis, co-investigator with Dr. John H. Ferguson in Research on Blood Coagulation and allied problems, has left for Pittsburgh, where her husband Dr. Jack Myers (from the Dept. of Internal Medicine at Duke University) has been made Head of the Department of Medicine at the University of Pittsburgh. Dr. Lewis is now affiliated with the Dept. of Pediatrics at Pittsburgh and has received grants from the USPHS and the Hemophilia Foundation.

Several papers dealing with the Department's Coagulation Research were submitted for publication this summer. One of them entitled "Blood Clotting Studies in Parturient Women and the Newborn," of which Mr. James W. Fresh, third-year medical student, is the "senior" author (along with Drs. Ferguson and Lewis), has been accepted by Obstetrics and Gynecology, the Journal of the American Academy of Obstetrics and Gynecology, and is to be featured as the lead article in the February issue. Dr. Ferguson presented the material of another paper, along with Dr. Lewis and Dr. T. Arends of Duke University, at the Fall Meetings of the American Physiological Society in Medford, Mass. Dr. Ferguson was Chairman of the sessions in which this paper was included. A third paper was offered by Dr. Ferguson on invitation to contribute to a Memorial Volume commemorating

Dr. J. F. Fulton's 25 years of service to Yale University.

Dr. Byron A. Schottelius conducted a summer research program at the State University of Iowa Department of Physiology. These investigations were concerned with changes in the mechanical and visco-elastic properties of muscle due to contracture, ischemia and fatigue. The "Symposium on Transport of Ions Across Cell Membranes" sponsored jointly by the Univ. of Wisconsin and the National Science Foundation was attended in Madison Aug. 28 through Aug. 31. Several sessions of the Fall Meetings of the American Pharmacological Society at Iowa City were also attended.

Dr. A. T. Miller, Jr., conducted summer research on Carbohydrate Metabolism in Obesity. He also attended the "Symposium on Transport of Ions Across Cell Membranes" sponsored jointly by the University of Wisconsin and the National Science Foundation at Madison, Wisc.

Dr. E. P. Hiatt was assisted in his research activities during the summer by two medical students, Lindsay Farrington and Gordon Crowell and by one dental student, John Atwater. They studied the effect of nitrate salts on experimental hypertension in rats and on renal excretion in dogs. The project is supported by a grant from the American Heart Association.

PSYCHIATRY

Dr. George C. Ham, Chairman of the Department of Psychiatry at the University of North Carolina Medical School, has recently been appointed a review editor for PSYCHOSOMATIC MEDICINE, the official publication of the AMERICAN PSYCHOSOMATIC SOCIETY.

The Department of Psychiatry will be holding a scientific meeting on the
(Continued on Page 29)



POSTGRADUATE NOTES

Morganton and Asheville Postgraduate Medical Courses

Postgraduate medical courses at Morganton and Asheville got under way September 21 and 22 with presentations by Dr. A. Price Heusner and Dr. Richard Peters, of the Department of Surgery. The presentations covered the "Management of Injuries to the Central Nervous System and Chest."

On September 28 and 29 Dr. David A. Young of the Department of Psychiatry used as his topics "Office Psychiatry" and "What the Patient May Expect of the Practitioner."

Dr. W. Proctor Harvey, Assistant Professor of Medicine, Georgetown University Medical Center presented the following subjects on October 5 and 6: "Don't Forget Your Stethoscope" and "Refractory Heart Failure."

There was no meeting during the week of October 12th due to the annual meeting of the 10th District Medical Society. Presentations to date have been enthusiastically received by the physicians of the Morganton and Asheville area.

Beginning Wednesday and Thursday, October 18 and 19, the following presentations will be offered in Morganton and Asheville:

October 19 — Morganton — Dr. Louis G. Welt, Professor of Medicine, "The Evaluation of Renal Function" and "Pathogenesis and Management of Dehydration."

October 20 — Asheville — Dr. Felda Hightower, Assistant Professor of Surgery, and Dr. Harold Green, Professor of Physiology and Pharmacology and Associate in Internal Medicine, Bowman Gray School of Medicine, "Peripheral Vascular Disease."

October 26 — Morganton — Dr. Charles E. Flowers, Associate Professor of Obstetrics and Gynecology, "Bleeding in Third Trimester" and "Medical Problems in Pregnancy."

October 27 — Asheville — Dr. Charles E. Flowers, "The Rh Factor and Erythroblastosis" and "Medical Problems in Pregnancy."

November 2 and 3 — Morganton and Asheville—Dr. Louis K. Diamond, Associate Professor of Pediatrics, Harvard Medical School, "The Management of Treatable Blood Disorders in Children" and "Jaundice of the Newborn—The Most Common Neonatal System."

Program for General Surgeons

A two-day program for general surgeons of the state and region on the subject of trauma, including burns, will be offered November 17 and 18 by the Department of Surgery, assisted by a guest lecturer, Dr. David M. Bosworth, Director of Orthopaedic Surgery, St. Luke's Hospital, New York.

A preliminary survey of North Carolina surgeons revealed an indication of interest in the program by over 100 surgeons.

Chapel Hill Program

The following weekly postgraduate

course on Pediatrics in General Practice is being offered to the physicians of Orange and adjoining counties during the period, Wednesday, October 12, through November 30. Meetings will be held at 2:30 p.m. each Wednesday in Room 324, 3rd Floor, Medical Building. The program is as follows:

October 12—"Chronic Pulmonary Infections and Tuberculosis," Dr. Annie V. Scott, Visiting Professor of Pediatrics

October 19—"Diagnosis and Therapy of Acute Infections," Dr. Edward C. Curnen, Professor and Head of Department of Pediatrics

October 26—"Common Surgical Problems in Pediatrics," Dr. Arthur H. London, Clinical Professor of Pediatrics

November 2 — "Emotional and Behavior Problems," Dr. Harrie R. Chamberlin, Assistant Professor of Pediatrics

November 9 — "Immunizations," Dr. Sidney S. Chipman, Clinical Professor of Pediatrics

November 16 — "Evaluation of Growth," Dr. Judson J. Van Wyk, Assistant Professor of Pediatrics

November 23—"Convulsions and Other Neurological Problems," Dr. Harrie R. Chamberlin

November 30—"The Tonsil and Adenoid Problem; Otitis Media," Dr. Nelson K. Ordway.

With The Faculty

(Continued from Page 27)

third Wednesday of each month. The first of these meetings was on Wednesday, September 21, 1955, when John P. Gillin, Professor of Anthropology and Research Professor in the Institute for Research in Social Science, presented a paper entitled AN ANTHROPOLOGICAL STUDY OF A CURING SHAMAN (Witch Doc-

tor).

Dr. Myron Sandifer, Jr., has received an appointment as Instructor in the University of North Carolina Medical School, Department of Psychiatry, beginning July 15, 1955. Dr. Sandifer is a graduate of Davidson College and Harvard Medical School. His psychiatric training was received at the Yale University Hospital, the U. S. Army and U. S. Navy, and the Beth Israel Hospital, Boston, where he participated in research on psychological reactions to heart disease. Prior to coming to Chapel Hill, Dr. Sandifer was in private practice in the Student Health Department of the Massachusetts Institute of Technology, Boston.

CONFERENCE ON HANDICAPPED CHILDREN

The School of Medicine is co-operating in the second North Carolina Conference on Handicapped Children, to be held December 8, 9, and 10 in Greensboro. The first conference was held in May, 1954, in Chapel Hill under the sponsorship of the state Departments of Health and Public Instruction and the Nemours Foundation of Wilmington, Delaware. The conference this year will be on the specific topic Educating Handicapped Children. Distinguished national speakers will include Dr. Leonard Mayo, Director of the Association for the Aid of Crippled Children, Dr. Romaine P. Mackie of the U. S. Department of Health, Education and Welfare, Dr. Franklin Foote, Executive Director, National Society for the Prevention of Blindness, and Dr. Ray Graham, Director of Special Education for Illinois.



STUDENT ACTIVITIES

SOPHOMORES

Various members of the second year class held summer jobs at the Medical Center here in Chapel Hill.

Hervy Averette did research work on blood-clotting mechanism with Dr. George Penick.

William Beckman, Carl Biggers, Carolyn Culbreth, and Dewey Pate worked in the Biochemistry Department on various aspects of lipid and protein metabolism.

William Elliott did research on renal intratubular pressure under Dr. Carl Gottschalk.

Peter McMichael, Paul McCubbins and Vernon McFalls worked in the Pharmacology Department and Bob Farrell was employed by the Pathology Department. Al Hamer worked in Anesthesiology.

Charles Hunter fixed tissues and stained slides this summer under Dr. Fowler in the Anatomy Department.

Jerry Pence got good clinical experience in the chemistry lab on the fourth floor of the clinic.

Nancy Pritchett did psychiatric case work all summer.

Fred Stowe did research under Dr. Miller in Physiology on the hypothalamus.

Several students held jobs in various hospitals around the state. Among these are: Cecil Barrier, John Brooks, Bill Bullock, David Crosland, and Carl Furr. Some held positions in summer camps, others worked in construction and tobacco.

Quite a few members took the matrimonial step. Bill Bullock, Al Hamer, Malcolm Cox, George Ennis, Dick Wallace, Vernon McFalls and Rebecca Hatcher. No births have been reported from any of the old married couples. Al Koenig presented a diamond to a girl from New York. From all reports everyone had an enjoyable summer.

A new member was added to our class—Barry Pate—who transferred from Duke Medical School. Also, Luther S. Nelson became a member of the class last spring.

Officers for the class this year are: President, David Crosland; Vice-President, Bob Story; Secretary, Fred Stowe; Treasurer, Carl Biggers; Student Council, Tom Craven and Al Koenig; and Whitehead Society, Pete McMichaels. Intramural Chairman is Dick Patterson.

JUNIORS

Weddings:

Julius Green-Pearl Parry, August 20, Baltimore, Md.

Bill Cornell-Dorothy Rae Smith, July 2, Raleigh.

Jerry McMahon-Patricia Horton, July 2, Stillwater, Okla.

James Burrus-Maude Sykes Blanton, August 13, Shelby.

Gordon Crowell-Frances Louise Rodgers, January 28, Creve Coeur, Mo.

Births:

Born to Bob and Joan Whitlock—boy—David Charles, June 18.

Summer Activities:

Most of the class were employed as hospital externs. At Butner State Hospital were: Dave Williams, Brooks Page, John Farrington, Bill Jones, Clint Wilson, and George Edwards. Wilson Hospital saw Bozy Suggs and Joe Murad. Jim Glover was at Pitt Co. Hospital and Bennett Hayes was with Watts Hospital. Jack Hobson and George Erwin both spent some time at camps. Three class members were at Morganton State Hospital. They were R. Pugh, Joel Conner, and Luther Clontz. Ben Wilcox spent two months in London as a ward clerk.

A new student who is added to the class is Lyndon Anthony from University of Tennessee in Memphis.

SENIORS

Wedding bells continue to diminish the ranks of free single men in this class of '56. This summer's vacation saw five more young boy doctors take the big step.

June 26, one day after close of school, in Norlina, N. C., John Deyton of Spruce Pine, N. C., took Clara Brauer to be his spouse. Bob Murray continued the trend by traveling to Fremont, Nebraska to wed Marjorie Johnston. Alex Goley and Frances Pepper, two other seniors, stopped by Fremont on a westward journey to participate in this wedding. Raeford, N. C., was the scene of the summer-time wedding of Bill Purcell of Laurinburg and Jane McKeithen of Raeford on August 5. Just nine days

later on August 14, Dean Jones of Jefferson and Evelyn Price of White Top, Va., were married at White Top. In Smithfield, August 30 was the wedding date of Leonard Woodall and Ruth Cooley, both of Smithfield. Our congratulations and best wishes to these young married couples. Who's next?

The stork visited two of the senior households this summer. Jim and Joanne Todd welcomed Susan Hope on July 9 and Bill and Ann McLendon were blessed with Kathrine Aycock on August 19.

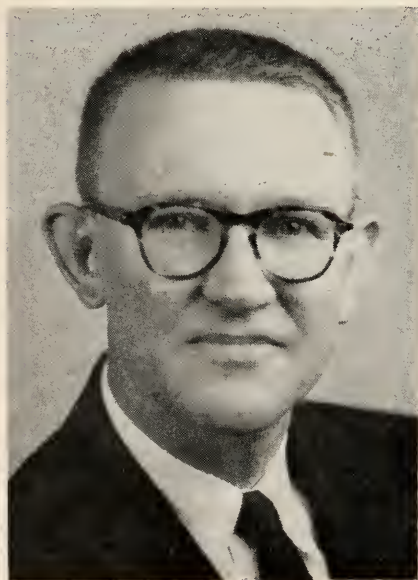
Although most of the class was employed as hospital externs and research assistants, several traveled to other parts of the U. S. and the world. Doug Harrell traveled through the mid-western U. S. as student representative for Pfizer Company. Milton Mann spent the summer at the Government Hospital in Tel Hashimer, Israel. Mil decided to head for home when the climate suddenly got hotter. A trip to Eastern Canada was enjoyed by Dewey Yarley and Wade Brannan. While in Toronto they visited with former employees of North Carolina Memorial Hospital.

This is that time of year when the fourth year students are considering internships. Applications commence on October 1 and must be in by January 10. Within the next two months many of us will be visiting prospective internships throughout the U. S.

Editorial

On Sept. 1, 1955, Mr. Emory S. Hunt, Jr., was appointed Assistant Director of the Medical Foundation of North Carolina, Inc. The energy and enthusiasm Mr. Hunt brings to his new duties are already appreciated by physicians throughout the State. As Administrative Assistant for Continuation Education since 1953, Mr. Hunt has acquainted the physicians of North Carolina with the expanding facilities of the UNC Medical School through a vigorous program of post-graduate courses and lectures. Mr. Hunt will continue in his position as Administrative Assistant for Continuation Education, and his extensive public relations activities and publicity work will be of inestimable value to the Medical Foundation.

A graduate of Wofford College, Spartanburg, S. C., Mr. Hunt entered the Armed Services in 1940. Behind his present rank of Colonel, Infantry, U. S. Army Reserve, lies a combat record as commander of an infantry battalion in the European Theatre of Operations which earned him the Silver Star and the Russian Medal for Valor First Class. In 1945 Mr. Hunt joined the Veterans Administration Regional Office at Winston-Salem



as Chief of the Training Facilities Section and, subsequently, as Assistant Chief of the Vocational Rehabilitation and Education Division. He served as Secretary of the Greenville, S. C., Chamber of Commerce from 1947 to 1949, and further demonstrated his versatility by becoming Vice-President and later President of the Johnson Candy Company, Inc.

As Assistant Director, Mr. Emory Hunt will contribute much toward helping the Medical Foundation achieve its goal of bringing good health within the reach of all the people of North Carolina.

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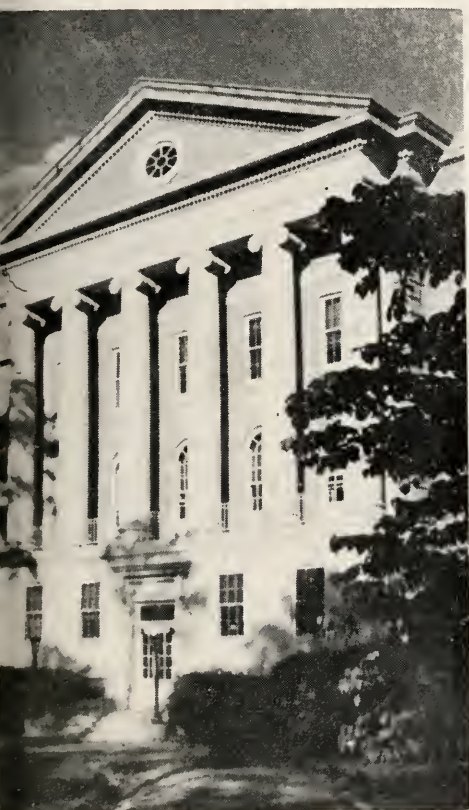
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The BULLETIN

III

December, 1955

No. 2



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THE BULLETIN

of the School of Medicine
in cooperation with the Whitehead Society
and the Medical Foundation
of the University of North Carolina

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The Dean's Page

December 5, 1955

As the Fall quarter is nearing an end it seems desirable to report on some of the activities of the Medical School since the last report at the Annual Meeting in April.

Among the faculty losses during the summer that have been most serious are those of Dr. F. Douglas Lawrason, Assistant Dean, who has become Provost in charge of Medical Affairs at the University of Arkansas Medical School; Doctors Frank Winter and Robert Murray in Ophthalmology who have gone respectively to California and Saskatchewan.

As part replacement for Dr. Lawrason in student counseling and guidance, a Committee consisting of Doctors Carl Anderson, Biochemistry; William Strauss, Bacteriology; Warner Wells, Surgery; and Dewey Dorsett, Jr., Medicine, is functioning effectively. Dr. A. T. Miller, Physiology, has assumed the chairmanship of the important Committee on Medical Education in Dr. Lawrason's stead.

Dr. S. D. McPherson, Jr. has returned from duty with the Medical Corps of the U. S. Navy and has assumed direction of the Division of Ophthalmology with the assistance of Dr. C. H. Peebles in the clinic and of Dr. F. W. Stocker in the Eye Pathology Laboratory. This service is growing rapidly.

The medical student enrollment for this quarter is 249, distributed as follows: 59 seniors, 58 juniors, 64 sophomores, and 68 freshmen. Of the 68 freshmen representing 36 counties in North Carolina, seven are sons of medical alumni.

Both bed occupancy and visits to the Outpatient Department continue to increase. There is still the problem of the large proportion of indigent

and part-pay patients to defray the cost of whose medical care the State has made inadequate preparation.

An additional ward in the Psychiatric Wing is being opened this month, intended primarily for alcoholic rehabilitation. Present plans are for the opening of the premature nursery unit in the early part of 1956.

Each of you has received from Dr. Verne Blackwelder, President of the Alumni Association, an account of the needs of the School in the present operating budget. The campaign is now under way in the State and outside among all the alumni to raise this modest budget supplement for needs which cannot otherwise be financed for this year. It is hoped that the alumni can annually assume this year's goal as a very minimum of support.

The faculty are indeed grateful for the interest and the support of the alumni and to the officers, counsellors, visiting committee and district chairmen who are so faithfully working for the advancement of the School. Some groundwork has already been done to make the Medical Alumni Association into a stronger, more cohesive force in aiding the continuing development of the school's potential educational and research contributions.

It may be that at the next annual meeting consideration should be given to holding district meetings throughout the State in order to keep the alumni better informed on the School's problems, accomplishments, and objectives.

The season's greetings to each of you.

W. Reece Berryhill

What The General Citizen Wants and Expects From A Medical Center

By Irving Carlyle

The general citizen has the same high regard for a medical center that he has for the medical profession. He will tolerate inefficiency and incompetence among lawyers, preachers, teachers, writers and newspaper people; and he has come to take for granted a certain degree of failure among business men; and he accepts with charity the shortcomings of unskilled labor, but he balks at all of these when it comes to the medical men and the facilities with which they must work. In his physicians and hospitals he demands standards and performance approaching perfection. The general citizen expects a higher degree of knowledge, skill and performance by the physician than he does by any other person whose services he buys. This is both a tribute and a challenge to the medical profession.

The reasons are clear—he has come to regard good health as his greatest earthly blessing, which science has now brought within his grasp. And he realizes that without good health, happiness is a lost cause and success is only a fleeting hope.

So long as the prevention and cure of disease lay in the "lap of the Gods," and everybody was more or less groping in the dark, not too much was expected of the doctors. In those times he knew that:

"We die of what we eat and drink,"
but now he knows that:

"More we die of what we think,"
as Edwin Arlington Robinson so well said. And the average citizen knows that his death can result from inadequate and faulty thinking by the doctor, as well as from wrong thinking by the patient. He also believes that science in capable hands, sooner or later, can come up with the answers to all our health problems. This attitude of the general citizen toward the medical profession has added

Mr. Carlyle, a prominent Winston-Salem attorney, former president of the N. C. Bar Association and former State Senator, has long been identified with the Good Health Movement in North Carolina. Mr. Carlyle delivered this address at the 75th anniversary celebration in April.

immeasurably to the responsibilities of the physician. Under such circumstances the physician must fall back upon the medical center as an ever present help.

The general citizen expects and wants much from the medical center.

In the first place, he expects to pay his fair share of the expense of his care and treatment in the medical center and then he expects the government to pay the balance of the cost on the basis that the investment which the State makes in the good health of its citizens is the wisest expenditure of public funds. I think that even Charles Brantley Aycock would agree with that statement if he were living today. Thomas Jefferson, who looked upon his founding of the University of Virginia as one of his major achievements, even above that of the Presidency of the United States itself, said: "Health is worth more than learning." The heavy investment which the State makes in the education of its boys and girls will be wasted in large measure if the recipients

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of its educational bounty are cut down by disease before living out their expectancy.

In the second place, the general citizen expects and wants the atmosphere of the medical center to be one of kindness and while a patient there he expects to be treated as a human being and not as a part of the documentary evidence in support of a scientific theory. He will rebel against being treated as just another guinea-pig. The state of his health is a very personal matter to him and he expects to be treated at the medical center in a very personal way and with a very special care. He believes very strongly that in the patient the medical center should "move, live and have its being."

In the next place, the general citizen expects that the training given at the medical center to his sons and daughters as doctors, dentists, nurses and technicians will be the best to be had for the money at hand. Any waste or inefficiency in this process will incur his violent condemnation. He will never be content with anything short of the best in medical education. He feels that a medical center operated by the State cannot be justified unless it has a good teaching program for the undergraduate training of more doctors, dentists, nurses and technicians who will carry the gospel of good health into the by-ways and hedges of the State.

In the next place, the general citizen looks upon the medical center as the instrumentality for bringing to bear on an individual patient the available health resources, whether the patient be in the hospital operated by the medical center or in some rural hospital in a distant part of the State. He expects the rural hospitals of the State and the rural health resources within the area served by the medical center to be improved through contact with the medical center. To him the total health needs of all the people, either directly or indirectly, is the responsibility of the medical center. He knows full well that a medical school cannot function or survive in academic seclusion. He knows also that the medical profession cannot reach its maximum usefulness or fulfill its true role without the support of an active medical center. He is aware that the search for truth which goes on constantly within the confines of a university, including the study of the social aspects of all the professions and of man's work and his place in history, make the university the ideal place for the location of a medical center.

And last but not least, he expects the medical center to foster a strong program of continuing education among the doctors of the State. The physician whose education ceases upon his graduation from medical school will never fulfill his highest possibilities. The need for continuing education among professional workers in all fields, particularly among physicians, is a matter of growing concern to all of society. As regards the physician, this requires in a large measure that the physician educate himself under the direction, guidance and inspiration of the medical center. Edward Gibbon stated a great truth when he said:

"Every man who rises above the common level has received two educations: the first from his teachers; the second, more personal and important, from himself."

The general citizen feels definitely that one of the major purposes of the medical center is to help the members of the medical profession to continue their education through all the years of their active practice by self-education. Through such a program of continuing education, the medical center can improve the quality of medical care and raise the standards of the medical profession. Through lectures, seminars and postgraduate courses conducted at the medical center for the members of the profession in general, the fruits of research and new methods of treatment will flow from the medical center throughout the entire State for the benefit of all the people.

These are some of the things that the general citizen earnestly expects and sincerely wants from his medical center.

School of Nursing

Recently Dr. Elizabeth L. Kemble, dean of the University of North Carolina School of Nursing, was appointed by Leonard A. Scheele, Surgeon General, to become a member of the Training Committee of the National Institute of Mental Health, serving as a consultant on the psychiatric nursing training program. This is one of the several consultant bodies which has been established by the Surgeon General to assist the Public Health Service in carrying out the functions authorized by the National Mental Health Act. The term of office is four years.

Medical Education in Formosa

By James C. Andrews, Ph.D.

In the latter part of 1954 I was requested by the Foreign Operations Administration to spend the first six months of 1955 as Biochemistry Consultant to the two medical schools in Taiwan (Formosa). These two schools are being actively supported by the Nationalist Chinese government under General Chiang Kai-shek. Since the inundation of mainland China by the Reds and the arrival of the Nationalists on the island of Taiwan, the Chiang Kai-shek government has made every possible effort to build up these schools to the point of turning out well-trained modern Chinese doctors, both army and civilian.

Between them, the two medical schools fulfill both needs. The National Taiwan University (NTU) is a very modern institution under the able administration of President S. L. Chien, containing colleges of art, science, law, engineering, agriculture and medicine. During the years of the Japanese occupation of Taiwan, from 1895 to 1945, this university was a part of the imperial Japanese educational system and offered a medical training course. This course was of very limited extent and used the old Japanese

Doctor Andrews is Professor and Chairman of the Department of Biochemistry and Nutrition in the School of Medicine of the University of North Carolina.

First year medical class of National Taiwan University School of Medicine, with Biochemistry faculty.



system of teaching, derived originally from the German. It was discontinued in 1949 when the present organizations of the medical school and hospital were planned. As the curriculum now stands, there is required a minimum of two years premedical work, four years of undergraduate medicine and one year's rotating internship, a total of seven years of academic work. An average of seventy medical students are being admitted each year, selected from several hundred applicants. The medical school contains the usual basic science and clinical departments with about 110 faculty members. The University Hospital is a teaching institution of 500 beds with, in addition to the above faculty, seventeen full time staff physicians and 96 residents. A school of nursing is attached to the hospital, a school of pharmacy has begun to function and a first class of dental students is being admitted this fall.

The above description applies in a general way to the army medical school. This is known as the National Defense Medical Center (NDMC). It is an entirely separate institution and all students and most faculty are in the uniform of the Chinese army. The proportion of faculty to students is somewhat smaller but in most respects the facilities and standards of work are comparable. Schools of nursing, pharmacy and dentistry are also included. The Chemistry Department NDMC handles the teaching of all premedical chemistry to NDMC students and also gives the same biochemistry course to their students of medicine, dentistry and pharmacy. The purpose here is strictly that of training doctors and other professional personnel for service to and in the Chinese army. The students are in uniform and are subject to the usual army routine and control. A few have done their premedical work at NTU and other institutions but the great majority have been in NDMC since graduation from high school. At present about 80 students are selected for each year's new medical class and a smaller number are assigned to dentistry, pharmacy and nursing. Once assigned to medicine, the student stays in that course unless reassigned to some other status because of unsatisfactory work.

The buildings in which the two schools are housed express to some degree the histories of the two. NYU medical school and also the University Hospital have large rambling brick structures built by the Japanese in an attempt to be, as they thought, very modern. They are large, commodious and extremely ugly. Where



National Taiwan University Hospital.

more space was needed some temporary frame buildings, much like on our own campus, are in use. For example, the offices and research laboratories of the Department of Biochemistry are located in one of the permanent buildings of Japanese origin. They have a luxurious amount of floor space. The student laboratory is housed in a large one-story temporary frame building, entirely adequate in size but in need of some improvements in equipment and laboratory facilities.

The buildings used at NDMC are all of a more temporary frame construction and further expansion is now being planned. It is noteworthy that when the Reds threatened to take possession of all of the mainland the Nationalists who envisaged the future need of a large health center on Taiwan were able to dismantle and move to the island by boat even laboratory furniture. I was shown actual student laboratory desks in physiology and biochemistry that had once been used in mainland medical schools.

Both schools have libraries which, with a few gaps in sets of journals, are very well stocked. In the case of NDMC much of their library was also brought from the mainland. Both are being built up as rapidly as their means permit and arrangements have been made whereby English scientific journals, subscribed for

and kept in the reading room of the U. S. Information Service (USIS) are passed on to the appropriate university library for permanent binding when no longer current. The NTU medical library is constantly profiting by this arrangement.

The question is frequently raised as to the standards and grade of instruction which the Chinese medical students on Taiwan are receiving. Based on my own observation of their work in the basic medical sciences and on what competent American clinicians have reported, both of these schools are easily the equal of many Grade A schools in this country. For this, much credit must be given to their respective administrations. All of our consultants who have spent periods of months in these schools have concurred in paying tribute to the energetic and far-seeing efforts of Dean H. Y. Wei of the NTU school of medicine. Backed by President Chien of the University, Dean Wei, although continuously struggling with far less than ideal conditions, has raised the standards of medical teaching to a gratifying degree. I found Dr. Wei a most pleasant and cooperative person to work with. He possesses a genial personality and is alert towards all suggestions for the improvement of his school. His integrity is so evident that his faculty all have entire confidence in him and in his support of high standards of student accomplishment. Operating within the frame-work of a military organization, Generals Loo and P'Eng, who direct the work of NDMC have always been extremely alert to take advantage of all possible chances for improvement of their school.

One very potent means of promoting improvements in these schools has been a series of faculty exchanges. Consultants, sent for periods of months by the FOA from institutions in this country to the medical schools in Taiwan have been concerned with general medical school administration, hospital administration, medical records, library, physiology and biochemistry. At the same time a succession of Chinese doctors have visited and worked in our institutions, often for months or years. For example, the head of the Department of Surgery, Dr. T. E. Kao, is now a guest professor at Duke and others have preceded him in similar capacity. A member of the faculty of NDMC Department Biochemistry, Mr. Kwei Liu, is now guest instructor in Biochemistry at UNC under the auspices of the China Medical Board of New York. A few months ago an internship for a Chinese woman pediatrician

was arranged in a North Carolina hospital. The heads of biochemistry at both Taiwan medical schools, and in the case of NTU, the younger members of the department have all spent one or more years in American biochemistry departments. As a result they have had excellent training in both their chemistry and in the use of English, which they all speak fluently.

In general, it may be said that the whole system of Taiwanese education has been very much improved since 1945 and especially since the Chiang Kai-shek government took over. This statement applies all the way from elementary education up. Under Japanese rule only elementary and vocational education received any encouragement. While a university existed in name, entrance to it and to any professional training was restricted to a very few Taiwanese. The islanders spoke their own language, one very different from any form of mainland Chinese, and were all taught Japanese. Any knowledge of Mandarin (official) Chinese, or of English, had to be acquired privately and more or less surreptitiously. Among the many reforms instituted by the present Ministry of Education has been the teaching of English from elementary grades on up. They are also attempting to standardize the use of Mandarin Chinese in secondary and higher education. The Taiwanese language will, of course, always remain the medium of everyday communication among those of Taiwan origin.

I found it perfectly possible to give biochemistry lectures in both schools in English. We found that by the use of a slightly slower speech the material in hand could be communicated to the students quite effectively. Along with his hard-working habits, ingrained since childhood, the average Chinese is a good linguist. It might almost be said that he would have to be such to learn even his own language. It is, of course, obvious that a character language like Chinese is utterly unsuited for the writing of chemical structures. I have listened to lectures given by the Chinese biochemistry faculty in Mandarin Chinese, of which I could understand not one word, but with ordinary English structural formulas with English letters for the elements being put on the blackboard.

One fascinating feature of Taiwanese education has been that of the mountain aborigines. The four main tribes who inhabit the high mountains of Taiwan are not racially Chinese.

They came centuries ago from the islands further south, are generally of Malayan stock and are not at all Chinese in feature. Under Japanese rule they received practically no education, even of an elementary type. Their relations with the Japanese rulers of the island were far from cordial. The confines of their land were usually marked with barbed wire fences, frequently electrified. Their numbers were not and are not large. Out of the total present population of nearly ten million on the island the aborigines number barely 200,000. But they now have schools, doctors and nurses and everything possible has been done to establish good relations between them and the Chinese population. For their once warlike habits they are now substituting agriculture, forestry, coal mining, etc., Even the trade in shrunken heads has dwindled, I was told, to nothing. Civilization is bringing results—even on that remote island.

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The Oren Moore Lecture

INFANT MORTALITY AND MORBIDITY IN RELATION TO CERTAIN MATERNAL FACTORS

Oren Moore was one of North Carolina's outstanding obstetricians who worked diligently and untiringly to improve the practice of obstetrics and reduce maternal and fetal mortality throughout the South. Each year a lecture in his honor is given at the Post-Graduate session of the North Carolina Pediatric and Obstetrical Seminar at Saluda, North Carolina. This year Dr. James F. Donnelly, Chairman of the North Carolina Maternal Mortality Committee was selected by Doctor Ross, Dean of the Obstetrics Section, as the lecturer.

By James F. Donnelly, M.D.

Parks has stated that infant mortality is a more sensitive index of adequate obstetric care than maternal mortality. Although the maternal death rates have dropped a hundred-fold since 1935, fetal mortality rates have fallen only slightly during the same period of time. In 1953, in North Carolina, there were 125,000 pregnancies, 11,000 of which terminated in abortion, 5,000 infants died before delivery or within 28 days after delivery, and an additional 5,000 or more infants were born malformed or crippled.

Lilienfeld and associates reviewing the problem of infant mortality and morbidity noted a striking parallel between obstetric complications which result in infant mortality and those which are associated with infant morbidity, i.e. cerebral palsy, epilepsy, mental retardation and certain behavior disorders. It has been the observation of the Committee on Maternal Welfare in North Carolina that those obstetric complications which cause the mothers to die are essentially the same as those responsible for the infant mortality. Since much of the infant mortality and morbidity is obstetric in origin, it certainly appears conceivable that it is preventable. Five general maternal complications will be discussed.

NUTRITION

For several reasons it is difficult to evaluate the role of nutri-

Doctor Donnelly is an Assistant Clinical Professor of Obstetrics and Gynecology in the School of Medicine, University of North Carolina and Obstetrical Consultant to the State Health Department.

tion in disease except in general fashion. It has been shown in very extensive studies of perinatal mortality in Chicago and in England that the mothers from better social and economic classes have fewer abortions and lower perinatal mortality rates. It seems to be a reasonable assumption that nutrition is a major factor in this. Prematurity is the single largest cause of neonatal death. Baird made the interesting observation in Aberdeen that the incidence of prematurity in the free hospital was one and one-half times higher than in the private. However, 18 per cent of the prematures born in the free hospital weighed less than 4 pounds, in contrast with 3 per cent in the private hospital. A high incidence of prematurity has been noted consistently in the lower socio-economic groups. Murphy noted that 62 per cent of 571 defect-bearing families were in the poor, or very poor, economic classes. This data indicated further that many of the mothers were anemic and had dietary deficiencies while carrying the defective child.

AGE AND PARITY

Age and parity are considered in nearly all studies on this subject. In general the infant mortality is high in mothers under 19 years, falling to its lowest level between the ages of 20 to 29, and rising steadily thereafter. This same curve is noted in relationship to maternal mortality and to infant morbidity. In the relationship to parity, the infant mortality is at its lowest with the first pregnancy and rises steadily thereafter. There appears to be no relationship between maternal age and congenital anomalies with the exception of mongolism. However, increase in parity does have a distinct relationship with frequency of congenital anomalies. The number of infants afflicted with cerebral palsy and other neuropsychiatric disorders rises with increasing parity and age if the firstborn is excluded. A little over half of children with cerebral palsy are first-born.

MATERNAL INFECTIOUS DISEASE

Gregg and Swan stimulated considerable interest concerning the relationship of maternal infectious disease and congenital anomalies. Kay reviewed all cases of maternal virus infection in the first and second month of pregnancy reported in the literature up to 1953. Rubella resulted in at least 40 per cent of the

offspring being malformed. A marked increase in the frequency of malformation was noted following mumps, measles and varicella. Significant increases were noted following poliomyelitis and infectious hepatitis. There was a marked increase in the abortion rate following poliomyelitis and infectious hepatitis occurring during the first few months of pregnancy. In animal experimental work a number of teratogenetic agents, asphyxia, certain chemicals, trypan blue, dietary deficiencies and x-ray are known to produce malformation. The resulting malformation depends largely upon the time at which the injurious agent was introduced.

MECHANICAL BIRTH INJURIES

Mechanical birth injury is said to account for 10 to 16 per cent of all perinatal deaths. Nearly all of them involve the central nervous system and are usually secondary to the type of delivery or procedures preparatory for delivery. It is generally agreed that such injuries are much more common following version and extraction, mid and high forceps deliveries, and breech deliveries, and in prematures. The lowest incidence of mechanical injury followed low forceps, spontaneous cephalic deliveries, and cesarean section. Although the relationship of mechanical birth injury with cerebral palsy and its associated disorders is not as common as it was in the past, a definite percentage of these disorders can be related to such injuries. The incidence of breech delivery among children with cerebral palsy is quoted as 4 to 12 per cent, in contrast to an expected incidence of 3 per cent. Other factors which are related to cerebral palsy are mechanical prevention of delivery, version and extraction, difficult forceps, and excessively large babies. The incidence of these factors is much higher than in control groups.

INJURIES DUE TO ASPHYXIA

Asphyxia is a much more frequent cause of fetal mortality and morbidity than mechanical injury. As Eastman has pointed out in his classic paper: "Mount Everest in utero" the oxygen tension of fetal blood is roughly equivalent to that present at an altitude of 29,000 feet. Any number of factors may alter the available oxygen supply for the infant which is already in a critical phase in regard to its oxygen demands. Maternal complications leading to such oxygen deprivation may be minimal or

even unnoticed. For instance, a fever of 102° to 104° will increase the oxygen requirement of the fetus by 28 to 50 per cent. Asphyxia may occur during the early months of pregnancy resulting in abortion or congenital anomaly. Certainly this is true in animals. Among the many causes of intrauterine anoxia are pulmonary infection, asthma, obstetric shock, hemorrhagic shock, abnormal uterine contractions, bleeding complications of pregnancy, rupture of the uterus, cord complications, heart disease, acute and chronic anemia. As far as neuropsychiatric disorders are concerned the above listed complications have been shown to be associated frequently. For instance, bleeding complications such as premature separation of the placenta were 5 times more common in children with cerebral palsy than in the control group.

The role of genetic factors was not considered, however, most authorities are inclined to agree that it plays a rather minor role in the problem of fetal mortality and morbidity. Improved obstetric care in respect to 1) nutrition, 2) closer attention to minor illnesses complicating pregnancy, 3) prevention of prematurity and better care of the prematurely born infant, 4) improved management of bleeding complications, 5) better judgment in the selection of the type of delivery, 6) more careful and less frequent use of analgesic and anesthetic agents, 7) improved planning of pregnancies, will be effective in reducing infant mortality and morbidity.

The hypothesis that fetal mortality and morbidity is largely environmental and, therefore, preventable offers a new and dynamic approach to this problem.

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Panel On Humane Letters And Human Illness

PROFESSOR STERLING A. STOUDEMIRE, Head

Department of Romance Languages, *Presiding*

Moderator: PROFESSOR EVERETT W. HALL, Philosophy

Participants

PROFESSOR U. T. HOLMES, Romance Philology

PROFESSOR A. C. HOWELL, English

PROFESSOR S. E. LEAVITT, Spanish

PROFESSOR C. P. LYONS, English

PROFESSOR B. L. ULLMAN, Classics

DOCTOR NATHAN A. WOMACK, Surgery

On April 12 and 13, 1955, the School of Medicine and the Medical Alumni Association presented a program which was highly significant in two respects. The first was the occasion for the program, the 75th anniversary of the beginning of medical education here at the University—the recognition of a long and honorable history which has in this decade culminated in the development of a medical center and four year school which are already achieving a national reputation. The second was the broad interest, timeliness, and high caliber of the program itself. A distinguished group, including statesmen, physicians, medical educators, and educators from the field of humanities participated in the discussion of topics which are live issues among all who are interested in medical education.

It has not been possible to publish the proceedings of the two day program, but significant parts will be presented in this year's issues of the Bulletin. Below is presented the second installment of the panel on Humane Letters and Human Illness, which elicited a great deal of interest among those who heard it. It has been edited from a recording made at the time of presentation. Additional installments of the panel will appear in subsequent issues.

Professor Hall

Well, my fellow humanists, we have some questions and some challenges before us. We also have a definition that Dr. WOMACK gave us, in which he emphasized the matter of literacy and articulateness in verbal discourse in the language of the arts. I think I will turn first, then, to Professor Howell and ask him if he will take up the defense for some, perhaps, appreciable increase of humanities and letters in medical education.

Dr. Howell

Dr. Womack has effectively stated, I think, the problem which of course is not new, even in medical education.

As a teacher of English, I have thought long and earnestly on this problem, having done my research on the writings of a great seventeenth century physician, Sir Thomas Browne whose *Religio Medici*, the religion of a doctor, was the favorite book of the great Sir William Osler.

As Dr. Womack has so effectively stated, these problems are not new. Sir Thomas Browne had the same ones as he pursued his studies in the great medical schools of Europe. They stem from the inevitable conflict between science and the less exact studies. If one is to be a scientist, why should he waste his time on what are termed "the polite studies"? At the turn of the present century arguments for science overwhelmed the advocates of the humanities. Science was "practical"; it kept a student in touch with reality; it gave him facts instead of opinions; it permitted him to perform "operations" on things instead of dreaming about "moonbeams." Education was almost *all* liberal arts fifty years ago, and it was rightly criticized as impractical. Now the pendulum is in danger of swinging too far in the other direction. Now the tendency is all for facts; our students rush as rapidly as possible into practical, vocational courses; and we need to correct the imbalance, not only as it applies to medical education but to undergraduate education in general. Our students come to us in the period of late adolescence and try to grow to maturity in the complex and critical civilization of the atomic age. Surely this growth does not come, to quote Professor McGee of Mt. Holyoke, "through the imitative and mechanical arts of vocational training, but through the arts of thought and judgment, the arts of the mind."

In preparing the would-be doctor for his profession, we should see that he is prepared to treat the whole man, not merely the human machine. He is more than a mechanic, more than a scientist; he is a healer. Therefore we should seek to strike a balance between competence and conscience as the aims of our education for the medical profession, to use the telling phrase of President Dickey of Dartmouth in the current *Atlantic Monthly*. Now the liberal, humane studies are concerned with education of

the conscience; "a concern for the choice of good and the rejection of evil . . . quickens all humanistic studies," notes President Dickey. I like the statement made by the Dartmouth College Board of Trustees, as one of the goals toward which studies on the humanities might strive. They affirmed, to quote President Dickey, that the College's "moral and spiritual purpose springs from a belief in the existence of good and evil, from faith in the ability of man to choose between them and from a sense of duty to advance the good." Now we in the humanities feel that the studies we direct: philosophy, history, literature, language, art—are means by which such a purpose may be attained. We are not concerned primarily with competence so much as conscience, and we believe that what we have to offer is good medicine for the would-be doctor.

Even when we are concerned with competence, as I am when I teach the writing of scientific papers and reports, we should never forget that other aim—that a student should be encouraged to have something worth saying to say rather than simply to know how to say something no matter how trivial. We *could* teach our students to twist the English language, to have language skills without values; and thereby "destroy whatever taste and morality they had as youngsters," as Dean Burchard of M.I.T. put it. For instance, he goes on to say, our students "could be led to believe in meaningless remarks. Then they would think it significant that more doctors did more of this or that than anybody else. Or if they were a little brighter, they could be pleased by the implication they were planting, that others had better emulate doctors who are obviously very wise about their own health." But if we teach in the true humanistic tradition, we should, I repeat, be more concerned with conscience than with competence; we should make clear that honesty, even if awkward, is preferable to "elegant dishonesty even if sometimes clever lying will turn a fast buck," to quote Dean Burchard again.

As I see it, another element enters into the problem. We think in words, and we can be moved by them. Part of the education a medical man needs has to do with his ability to verbalize his ideas. I don't mean merely writing reports, either, important as that is. A doctor does not practice his profession twenty-four hours a day; he is also a member of society—he reads, he converses, he advises, he speaks to public groups, he is a responsible and

respected member of his community. An adequate knowledge of words will enable him to lead a fuller, more satisfying, more worthwhile life, both as a physician and as a citizen. In our humanities studies we present him great ideas, expressed in language so transparent, so beautiful that it is bound to affect his own ability to express his thought. No man, for instance, who has made himself master of the Bible, as Sir Thomas Browne did, will be at a loss for words for all occasions, or thoughts, for that matter. Moreover, as Dean Calkins of Rutgers so effectively expressed it: "Through the inspiration of reading, one may seek answers to questions that go to the very heart of human existence and help one to gain perspective and capacity to come to grips with life. From the study of history and biography one may discover one's self as a part of the continuing activity on this globe, and out of this may come some inspiration which will induce one to do all that one can for developing here the economy and society which will stand the test of time. One may gain the inspiration to deal with life as it is and not be overwhelmed by it."

The specialist always runs a grave danger, the danger that a specialist in another field may easily convince him because he has no broad perspective of experience by which to judge the arguments of another specialist. Thus Hitler led astray so many German scientists, who refused, or were unable, to see the implications of his diabolic philosophy. My illustration may not be a good one; but I think that, to avoid such a danger, we have a duty to teach our students how to read, that is to throw into proper perspective what they see, for example, in the newspaper columnist's comments, in *Time* and *Life*, and the *Readers' Digest*, to recognize speciousness, and special pleading, and slanted opinions when they see them; and to judge what they read in the light of the great deeds and thoughts of the past. The scientific specialist, who has learned more and more about less and less, must, of necessity, have less and less to do with humane letters, literature, history, biography, philosophy, where values are more important than facts. Hence he comes, or is likely to come, more and more to rely on specialists in other fields for ready-made opinions; hence he becomes easier prey for the shibboleths of special interests with axes to grind.

The four short years of undergraduate training are all too brief a time for the student to familiarize himself with the title

page and the table of contents of the book of life; but if instead of introducing him to all of it, however superficially, we make him memorize that chapter called "Chemistry," or "Psychology," or "Zoology," regardless of how important these are, we run the risk of sending him on into his technical training a half-educated man—trained in his specialty perhaps, but lacking discrimination, judgment, and a sense of values. These are what we try, however imperfectly, to teach in the humanities. And these, we firmly believe, are an important ingredient in his training.

Professor Hall

I am sure Dr. Womack has some questions he wants to direct to you, but I am not going to allow these at this point. He may be thinking about whether medical men really have less conscience than men of letters, poorer morality, or what not, but we will give him that opportunity later. I do think, though, Mr. Howell, that you have taken a line which is a good one for men of letters here to follow, and that is to emphasize that a doctor is not merely a research scientist, not merely a mechanic of the human body, but is himself a human being, and is dealing with human beings and human situations, and particularly with situations of emotional stress, and of great significance in the lives of his patients.

Kinston and First District Postgraduate Medical Courses

A six-weeks postgraduate medical program will begin in Kinston Tuesday, January 10, for doctors in the Kinston area. Another postgraduate program for the First District Medical Society will begin in Ahoskie Wednesday, January 11.

Seminar on Industrial Health

A regional Seminar on Industrial Health co-sponsored by the Occupational Health Committee of the State Medical Society, the Liberty Mutual Insurance Company, and the University of North Carolina School of Medicine, has been announced for February 9 and 10 at Memorial Hospital.

Research Conferences School of Medicine

A forum in which the results of investigative work can be reported and discussed is afforded by the School of Medicine Research Conference held on the last Thursday evening in each month at 7:30 o'clock in Room 324 of the School of Medicine Building. The meetings are open to all persons interested.

The Editors of The BULLETIN present here abstracts from several of the presentations, and hope to include other abstracts in subsequent issues.

The Locus of Origin of the Avian Parathyroid

By William E. Dossel, Ph.D., Instructor of Anatomy

It has been generally accepted, since the original description of Verdun in 1898, that the avian parathyroid gland takes origin from buds of tissue that grow out from the entoderm lining the third and fourth pharyngeal pouches; and further, that the thyroid gland develops from a single median ventral evagination of pharyngeal entoderm. Recently Venzke promulgated a hypothesis to the effect that the avian parathyroid glands are derived from a median ventral entodermal primordium that evaginates continguously with that of the thyroid gland and subsequently becomes divided into the definitive quadrilobate condition.

It has been found, however, that the thyroid primordium, when isolated, together with the immediately surrounding mesenchymal and overlying entodermal tissue, and placed in the coelomic cavity of the chick embryo, fails to produce parathyroid tissue even though perfectly normal functional thyroid tissue is present in the recovered implant. The complementary experiment, in which third and fourth pharyngeal pouch entoderm *sans* thyroid primordium was implanted, produced parathyroid tissue in nearly every case.

It is to be concluded, therefore, that *the locus of origin of the avian parathyroid gland is not different* from that of other vertebrates and resides in the entoderm of the third and fourth

pharyngeal pouches. Accordingly, the original description of avian parathyrogenesis, outlined by Verdun is, to this extent, supported by experimental evidence.

Phenobarbital: Some Quantitative Pharmacological Observations (With Some Meditations on Its Use and Misuse)

By Thomas C. Butler, M.D., Professor of Pharmacology

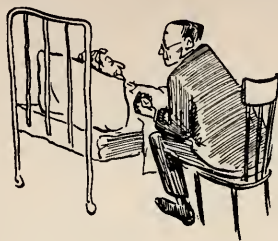
Although phenobarbital has been in use for more than forty years, knowledge of the way in which the body disposes of the drug and the way in which the body reacts to the drug has remained inadequate. Methods of use have been based in part on practical experience and in part on erroneous assumptions. A method has now been developed for measuring the concentration of phenobarbital in blood, and this method has been applied to several problems relating to the clinical use of the drug. It has been found that phenobarbital disappears very slowly from the blood, about four days being required for the concentration to fall to half its original value. When the drug is given daily, it accumulates in the body and the concentration continues to rise for about two weeks. After patients have received phenobarbital daily for several days, they develop a high degree of tolerance to the soporific effects. Different schedules of chronic dosage have been examined, and it is concluded that there is no advantage in administration at very frequent intervals.

The Use of Radiogold in Studying the Lymphatic Dissemination of Cancer

By Colin Thomas, M.D., Assistant Professor of Surgery

Radioactive colloidal gold has been employed in studying the lymphatic drainage of externally situated cancers in man. By placing tracer amounts ($1/1000$ of the usual therapeutic dose) of this isotope near the tumor, the predominant route of lymph flow can be determined prior to time of operation. Examination of lymph nodes removed at operation show that it is unlikely that a cancerous lymph node will ever retain enough radioactive gold to cause its own destruction.

Due to limited space in this issue a number of research abstracts could not be published. They will be carried in future issues.



ALUMNI NOTES

Rear Admiral Leslie O. Stone, '16, has retired from the U. S. Navy and recently opened his office for the practice of ophthalmology and otolaryngology in Tryon, North Carolina.

C. Hege Kapp, '35, opened an office in November at 607 Nissen Building, Winston-Salem, N. C., for private practice in Diseases of the Chest.

Edmund R. Taylor, '39, who has been practicing surgery in Durham for several years has moved to Columbia, South Carolina; he has an office at 1515 Bull Street.

Louis D. Hayman, Jr., '42, opened an office at 605 New Bridge Street, Jacksonville, N. C., on September 1st. Dr. Hayman is in internal medicine.

H. William Harris, '42, has joined the staff of the University of Utah College of Medicine as Assistant Professor of Medicine; his office is located in Ft. Douglas Veterans Hospital, Salt Lake City.

John Vincent Arey, '44, completed a tour of duty in the Army in June and opened an office for the practice of Obstetrics and Gynecology in Concord, N. C., at 97 North Union Street.

John F. Kendrick, '44, is now located at 1001 West Franklin Street, Richmond; his practice is limited to Neurological Surgery, Neurology, and Electroencephalography.

James H. Manly, Jr., '44, opened his office in the early fall in Raleigh, N. C., at 2007 Clark Ave., Cameron Village; his practice is limited to General Surgery. Jim has been on the staff of the North Carolina Memorial

Hospital for the past several years.

John R. Pender, '45, returned to his hometown of Charlotte, N. C., in July to begin his practice of surgery; he is located at 623 Professional Building.

Edward G. Bond, '46, is practicing internal medicine and cardiology at 106 East King Street, Edenton, North Carolina. During the late summer he was married to Vivian Phipps of Chapel Hill.

Robert S. Lackey, '46, joined the staff of Charlotte Memorial Hospital, Charlotte, N. C., in Diagnostic and Therapeutic Radiology in September. Bob completed his training in radiology at the Mallinckrodt Institute of Radiology at the Washington University in Saint Louis.

A recent letter from Jules Amer, '46, indicates that he is now at the Children's Medical Center, 1575 Vine Street, Denver, Colorado.

Edwin L. Webb, '46, wrote earlier in the year that he had decided to locate in Montgomery, Alabama, for his practice of pediatrics. We do not have a street address for him.

Richard M. Margolis, '49, has completed his training in pediatrics at the North Carolina Baptist Hospital; he has opened an office at 3218 Rivers Avenue, Charleston Heights, South Carolina.

Edward N. O'Quinn, '49, is now associated in the practice of Obstetrics and Gynecology with Dr. E. P. Walker at 17th and Princess Streets in Wilmington, North Carolina.

Joseph T. Miller, '49, is practicing internal medicine in Gastonia, N. C. His office is located at 155 York Street in the Medical Building. Joe spent the past year in the Department of Medicine here in Chapel Hill.

Elwood B. Coley, '50, completed his training in pediatrics at the North Carolina Memorial Hospital in June. He is now practicing in Henderson, North Carolina. His address is 523 South Chestnut Street.

Benjamin H. Josephson, '50, is associated with Dr. Harry Abramson at 14 West Young Street, Somerville, New Jersey, in the practice of pediatrics.

Belk C. Troutman, '50, and Jack Carson, '50, are doing general practice together in Grifton, North Carolina.

George N. Harrell, '51, is doing general practice in Palmetto, Florida. He opened his office in September at 733½ Eighth Avenue.

John K. (Pete) Pearson, '51, has returned to his hometown of Apex, North Carolina, for the practice of medicine.

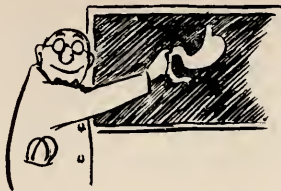
Leland S. (Bo) Averett, '54, and Paul H. Brigman, '54, have opened their offices for the general practice of medicine at 755 North Main Street, High Point, North Carolina.

Class of '54 — Hugh Hemmings reports that he has heard from almost everyone in this class during the summer in answer to his questionnaire. Hugh is still at the N. C. Memorial Hospital with a residency in Pediatrics. Here also are Steve Wilson in Pathology, Charles Fulghum and Barbara Moore in Psychiatry, Sara Lippard Hoyt in Pediatrics, William Weinel in Ob-Gyn, and Joe Dewalt in Medicine. Others who have residencies this year are as follows: Harold Hines, Charles Robertson, and Louis

Spillman at the City Memorial Hospital in Winston-Salem, Nat Swann and Al Spencer at the Medical College of Virginia, William Vinson at the Kern General Hospital in Bakersfield, California, Robert Vinson at the University of Iowa Hospitals, Herman Lineberger at the Hartford Hospital, Don Anderson at Barnes in St. Louis, Neil Patrick at the Boston City Hospital, Harry Sherrill at Cone Memorial in Greensboro, Frank Graves at Roper Hospital in Charleston, and Tom Patterson at Watts Hospital in Durham.

A number from this class are now in the service. Don Wolff is with the Public Health Service on the Outer Banks at Buxton, N. C. J. C. Parke is at the Navy Recruiting Station in Columbia, S. C. Also in the Navy are Charles Owens, Cary Guy, Jack Grant, and Leon Cowan. Freddie Williamson is in the Army at Fort Knox, Kentucky, and Ed Williams at Sherman Air Force Base, Texas. Fred Saunders, Archie Walker, and Mac Fleishman (who, incidentally, along with Jack Grant, has been married in the last year) are also in the Army for a two year stretch.

A few members of this class have gone into practice. Doug Conkwright has opened an office in London Bridge, Virginia. Paul Brigman and "Bobo" Averette have gone in together in general practice in High Point. Clifton Quinn and John Ward are together in La Grange, and Robert Thomas has gone with five other doctors in Bluffton, S. C. Don Presley is assisting a general practitioner in Canton, N. C., Durwood Tyndall plans to go in practice this year in eastern North Carolina, and George Brown is working as Health Officer in Haywood County until the Navy calls him.



WITH THE FACULTY

BACTERIOLOGY

Dr. William J. Cromartie was guest speaker at a meeting of the Gamma Chapter of Alpha Epsilon Delta in Wake Forest on November 15, 1955. Dr. Cromartie is Advisor of the local North Carolina Beta Chapter of Alpha Epsilon Delta, National Premedical Honor Society.

MEDICINE

Dr. J. T. Sessions spoke on "The Treatment of Severe Liver Disease" at the annual meeting of the Sixth District Medical Society at Butner, North Carolina, on October 5th.

Dr. Louis G. Welt discussed "Renal Regulation of Water, Electrolytes and pH" at the American College of Physicians Postgraduate Course held at Duke University School of Medicine October 11. Also at this meeting Dr. Charles H. Burnett discussed "Biology of Potassium."

Dr. Thomas W. Farmer has been awarded a grant from the United States Public Health Service (USPHS B-581 (C2) in the amount of \$14,-907.00 for the period from December 1, 1955, through November 30, 1956 for continuation studies on "An Investigation into the Spontaneous Electrical Activity of Isolated Unanaesthetized Cortical Grey Matter in the Cat."

Dr. Bernard G. Stall has been awarded a grant from the Atomic

Energy Commission, (Federal Contract No. AT-(40-1)-2165), in the amount of \$12,294 for the period from September 1, 1955, through August 31, 1956, for the project "A Study of Ion Transport Across Smooth Muscle Cell Membrane."

OBSTETRICS AND GYNECOLOGY

On October 4th Dr. Leonard Palumbo addressed members of Greenville Medical Society and staff of Greenville General Hospital, Greenville, South Carolina, on "Recent Advances in Obstetrics and Gynecology" and "The Problem of Gynecological Cancer." On October 18th, he read a paper before the Virginia Medical Society in Richmond, Virginia, entitled "Omissions and Commissions in Maternal Mortality."

Dr. Maurice Couturier attended a meeting of the North Carolina Obstetrical and Gynecological Travel Club in New York City on November 3rd.

The Department of Obstetrics and Gynecology were hosts to the American Gynecological Travel Club, composed of thirty members who are heads of departments at leading medical schools in the United States and Canada. Papers were presented by Dr. A. T. Miller, Jr., on "An Analysis of Body Components Related to Weight Changes"; Dr. Leonard Palumbo on "Methods of Treating Pelvic Malignancies in This Institution"; Dr.

Deborah Leary on "The Place of Podalic Version and Extraction in Obstetrics Today"; and Dr. Charles E. Flowers, Jr., on "An Evaluation of the Hypotensive Drugs in Pregnancy." This group also visited Duke and Bowman Gray Medical Schools.

Dr. Flowers attended the meeting of the Southern Medical Association in Houston, Texas, where he presented a paper entitled "An Evaluation of Sodium Pentothal for Delivery."

PATHOLOGY

Drs. K. M. Brinkhous, George Penick and Cecil Hougie of the Pathology Department attended the Conference on Platelets of the National Research Council in Washington on November 18 and 19th. Dr. Brinkhous, Chairman of the National Research Council Panel on Blood Coagulation, was co-chairman of the conference.

Dr. William E. Loring of the Pathology Department attended the annual meeting of the Inter Society Cytology Council in Cleveland on November 11th and 12th.

Dr. Leroy W. Bowersox, a medical graduate of the University of California, joined the Pathology Department November 1st as an Assistant Resident in Pathology. Dr. Bowersox has recently completed a tour of duty in the Army Medical Corps.

PEDIATRICS

Dr. Nelson K. Ordway, Professor of Pediatrics, U.N.C. School of Medicine was elected vice-chairman of the Pediatrics Division of the Southern Medical Association at the Association's annual meeting in Houston, Texas, November 14-17, 1955.

During the month of November

Dr. Edward C. Curnen attended a meeting in Chicago of the Commission on Influenza of the Armed Forces Epidemiological Board of which he is an Associate. He also participated in an International Symposium on Tuberculosis in Infancy and Childhood at the National Jewish Hospital in Denver and presented a paper on "Epidemiologic Aids in Clinical Diagnosis" at a meeting of the Southern Medical Association in Houston.

Dr. Curnen has recently been appointed to the Editorial Board of MEDICINE.

Dr. Curnen, Dr. Annie V. Scott and Dr. Sidney S. Chipman have received a grant in the amount of \$850 from the United Medical Research Foundation of North Carolina Fund for the continuation of a tuberculin testing survey in North Carolina school children. Dr. Van Wyk was the recipient of a grant in the amount of \$1,000 from this fund for the purchase of equipment for his endocrine laboratory.

PHYSIOLOGY

Dr. John H. Ferguson attended the National Research Council Subcommittee on Blood and Related Problems which was held in Washington, D. C., November 18th and 19th.

Dr. A. T. Miller, Jr., attended a Teaching Symposium on the Basic Sciences in Aviation Medicine, at the School of Aviation Medicine, Randolph Field, Texas, on November 14 and 15. This was the first of a projected series of symposia on the role of the medical schools in training future physicians in those aspects of medicine essential for national defense. These symposia are sponsored by the Medical Education for National Defense program, in which some 15

medical schools are currently participating.

Dr. E. P. Hiatt attended the annual meeting of the American Heart Association in New Orleans, October 22-26, where he participated in the Scientific Sessions and served as a delegate from the North Carolina Heart Association to the General Assembly.

PSYCHIATRY

Dr. George C. Ham, Chief of Psychiatric Service, North Carolina Memorial Hospital, has announced the addition of eleven new psychiatric residents to the staff of the Department of Psychiatry of the University of North Carolina School of Medicine. Of the eleven doctors, the following ten began their terms of psychiatric residency at N. C. Memorial Hospital on July 1, 1955:

First Year Residents: Dr. Franklin M. Draper, Jr., a graduate of Harvard Medical School and previously at N.C. Memorial Hospital; Dr. Charles B. Fulghum, Jr., a graduate of the University of North Carolina Medical School and previously at Temple University Hospital; Dr. Rowland E. Fullilove, a graduate of the University of Maryland and previously at Church Home and Hospital, Maryland; Dr. Cornelius Lansing, a graduate of Harvard Medical School and previously at Massachusetts General Hospital; Dr. Barbara Moore, a graduate of the University of North Carolina Medical School and previously at Queen's Hospital, Hawaii; Dr. Robert E. Smith, graduate of the New York Medical College, and previously at the University of Nebraska Hospital; Dr. Robert W. Whitener, a graduate of Northwestern University and previously at Charity Hospital in Louisiana;

Second Year Resident: Dr. Jean H. Menetrez, a graduate of McGill University School of Medicine and previously at Military Hospital, Canada.

Third Year Resident: Dr. Harold J. Harris, a graduate of Long Island College of Medicine and previously at Massachusetts General Hospital and the Menninger Foundation.

Dr. Faith N. Ogden, a graduate of Columbia University School of Medicine and now associated with the San Diego County Department of Health, joined the staff on September 15. Also, Dr. George Mora joined the staff on October 15. Dr. Mora, a graduate of the University of Genoa, Italy, will come to Chapel Hill from the Memorial Hospital, Pautucket, Rhode Island.

RADIOLOGY

On October 21, Dr. Ernest H. Wood was guest speaker at a meeting of the Atlanta Radiological Society. His topic was: "Cerebral Angiography in the Diagnosis of Vascular Lesions and Tumors of the Brain."

On October 22, Dr. Wood spoke to the combined staffs of Emory University Hospital and Grady Hospital on the "Role of Radiation Therapy in the Management of Tumors of the Brain and Spinal Cord."

Dr. Wood, Dr. Charles Bream, Dr. William H. Sprunt and Dr. Hubert Batten attended the fall meeting of the North Carolina Radiological Society in Greensboro on Saturday, November 26. Dr. Wood was installed as President of the Society and Dr. Sprunt was elected secretary-treasurer.

SURGERY

Dr. David A. Davis and Dr. H. Robert Brashear presented papers before the Southern Medical Association in Houston, Texas, November 15-18.



STUDENT ACTIVITIES

SENIORS

Two senior families were recently blessed with additions. Edith and Jerry Bergmanis had a son, Mark Sewell, on November 25. Ellen and Bill Easterling had a son, David Roger, on November 25.

FRESHMEN

Newly-elected officers of the first-year class are Carwile LeRoy, president; Robert C. Brown, vice-president; Martha Kornegay, secretary, and Kenneth B. Lewis, treasurer. John Tayloe is serving as athletic director.

Some recently compiled data on the class reveal the following facts: By far the largest number (64%) of the first-year students did their undergraduate work at the University of North Carolina. The next largest group came from Davidson College. Other colleges represented, listed in the order of the number of students now in the first-year class, are Wake Forest College, Duke University, Elon College, Furman University, William and Mary, Dartmouth, Eastern Carolina College, and the University of Alabama. The latter six are represented by one student each. Approximately 57% of the total number of students in the class hold degrees from

the above institutions. Practically all members of the class are Tar Heels, there being only three out-of-staters. These come from South Carolina, New Jersey, and the Canal Zone. Approximately one-third of the class is married; it is to be contemplated that this percentage will have to be revised upward during the coming four years!

The first social outing for the freshman class was held at the Chapel Hill Country Club on October 31st.

WHITEHEAD SOCIETY

Dr. Berryhill recently announced the gift of \$300.00 to the Medical School by Dr. Lenox D. Baker, class of '31 and now chief of orthopedic surgery at Duke University. The money was put in a fund entitled "The Jim Baker Petty Loan Fund" in honor of Dr. Baker's father and is to be available for loan to any student in the Medical School. As suggested by Dr. Baker, the Whitehead Council adopted rules for the use of the fund. In essence, these are that any student may borrow up to \$25.00 with no restrictions being made as to the use of the money. Half of the loan is to be paid in 30 days and the remainder by 60 days. A service charge of 1% is charged and is added to the fund. The Fund is being administered by Miss Dunlap in Dr. Berryhill's office.

Editorial

In his address as a part of last year's 75th anniversary program, published in this issue, Mr. Irving Carlyle emphasizes the importance the public attaches to the physician's continuing to learn and grow throughout his professional life. "Lifelong learning," a term coined by the University of California for its continuation education programs, is particularly apt as a description of the task which faces the physician after graduation. It takes continuing, strenuous effort by the physician to keep abreast of a field which is progressing and changing with breath-taking rapidity, but this "lifelong learning" is needed for more than merely keeping up with advancing knowledge. Of equal importance is its contribution toward keeping sharp the tools in intellectual and professional growth: a critical and inquiring attitude, eager scientific curiosity, and the capacity for disciplined study. These tools have a tendency to become blunt under the erosive pressures of practice, and participation in postgraduate activities is one of the means of counteracting this tendency.

That North Carolina physicians appreciate the importance of continuing education is evident from the fact that the postgraduate activities of the School of Medicine were begun as a result of their request, and have developed and grown with their constant interest, support, and participation. This continuing interest and support will be a vital factor in determining the extent and direction of future development.

A major objective of the School's continuation education program is to meet needs not being met by other programs in the state. In keeping with this objective a greater proportion of future programs will be directed at more intensive coverage of limited subject areas. Such programs are much needed, but can be expected to attract smaller audiences and, hence, less income.

To meet this situation, and to make possible experimentation with programs which appear to be needed, but which cannot be undertaken at present because of uncertainty as to whether they will pay their way, a modest appropriation is being requested for the Office of Continuation Education. If this appropriation is secured it will greatly increase the School's effectiveness in meeting the needs of North Carolina physicians for "lifelong learning."

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